PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
ARP2189

COMPACT DISC JUKEBOX
CJ-V51 HEM

- **Refer to the service manual ARP2122 and (1) ARP2121, CJ-V50.**
- **This manual is applicable to the CJ-V51/HEM type.**

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

The CJ-V51/HEM type is the same as the CJ-V50/HEM with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		CJ-V50/HEM type	CJ-V51/HEM type	
⚠	Glow lamp	Non supply	DEL1007	For Fluorescent lamp
	Lock plate	.....	DNF1329	For Coin box assembly
	Lock	.....	DXC-101	For Coin box assembly
	Cylinder lock	.....	DXB1103	Front side
	Operating instructions	DRB1044	DRB1045	
	Packing Case	DHG1252	DHG1277	

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Service Manual

(1)
ORDER NO.
ARP2121

COMPACT DISC JUKEBOX

CJ-V50

- Refer to the service manual ARP2122, CJ-V50.

- This manual is applicable to the HEM type.

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ISI NOV. 1990 Printed in Japan

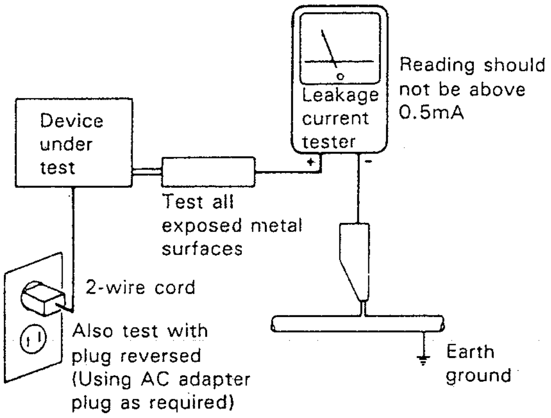
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
Device under test
+
-
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

WARNING!

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below.
Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.
The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

ADVARSEL!

Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Denne advarsel or angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anveisning.
Batterierne må kun udskiftes med batterier af samme type og mærke.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

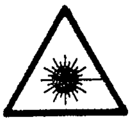
Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier.
Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

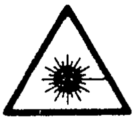


LASER
Kuva 1
Lasersateilyn varoitusmerkki

WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF HIGHER CLASS THAN 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

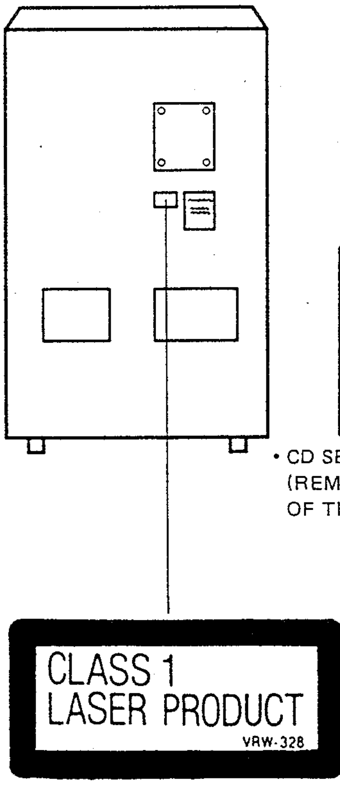
LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm



LASER
Picture 1
Warning sign for laser radiation

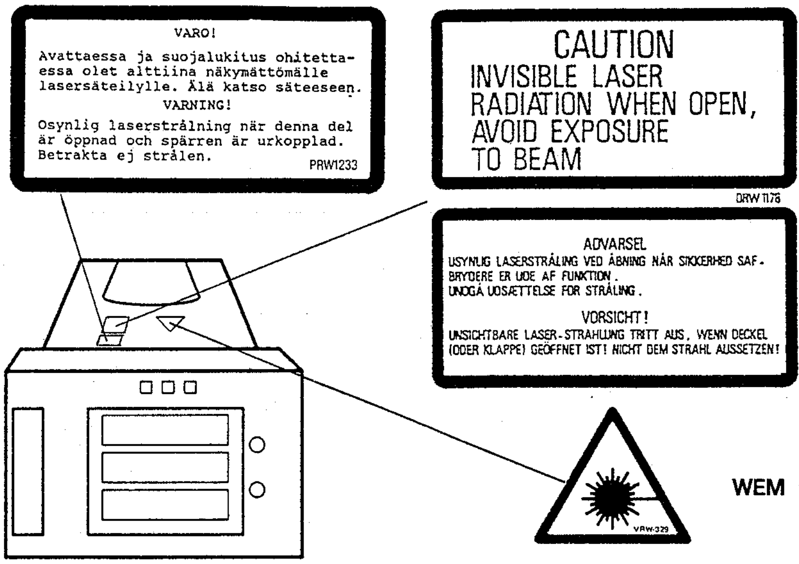
LABEL CHECK

- MAIN SECTION (REAR SIDE)



CLASS 1
LASER PRODUCT
VRW-328

HEM type



VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!
Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
PRW1233

CAUTION
INVISIBLE LASER
RADIATION WHEN OPEN,
AVOID EXPOSURE
TO BEAM
DRW1176

WEM type

ADVARSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAF-BRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT!
UNSICHTBARE LASER-STRAHLUNG TRITT AUS, WENN DECKEL (ODER KLAPPE) GEÖFFNET IST! NICHT DEM STRAHL AUSSETZEN!

WEM type

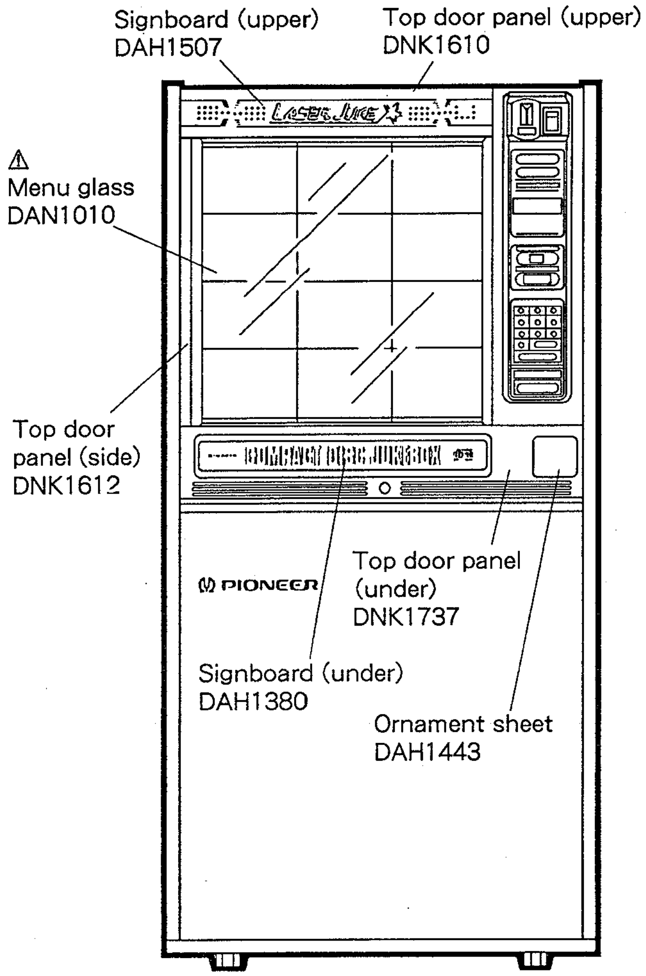
- CD SECTION (REMOVING CONDITION OF THE BONNET COVER)

Additional Laser Caution

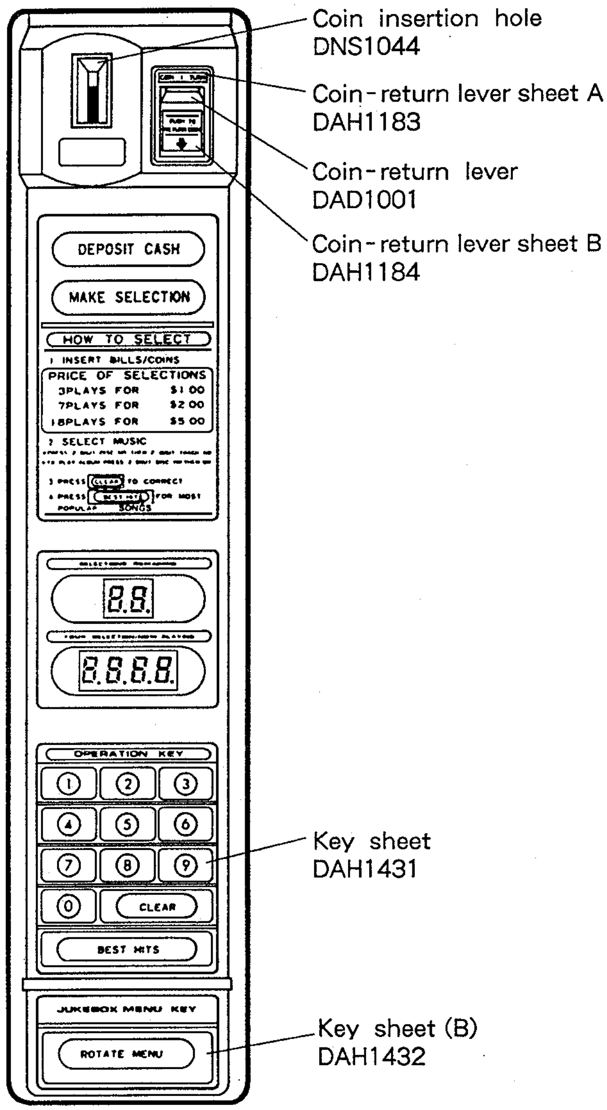
1. The player microcomputer checks the inserting condition of magazines A, B and C by using the combined signals of the SENS1 (S804), SENS2 (S805), SENS3 (S806), LOCK1 (S801), LOCK2 (S802) and LOCK3 (S803) switches. It is after these three magazines are fully inserted that commands from the control microcomputer are accepted. The laser diode is turned ON for illumination by outputting the laser diode ON signal from the control microcomputer when the CLAMP switch (S1001) (DSK1001), which signals that the tray is to be pulled from the magazine and detects clamping condition, is set to ON and the player receives the "rising command" in the disc clamping condition. If no disc is available, it turns OFF after 20 seconds. The illuminated laser diode goes out when receiving a "Reject command", a "disc change command" or a "magazine eject command."
   The laser diode continues to oscilllate when pin ㉙ of CXA1081S (IC1) is connected to GND or to pin ⑤.
2. If the fault condition described in 1 is induced with the cover open and with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a class 1 or higher laser beam.

2. PARTS LOCATIONS

2.1 EXTERIOR

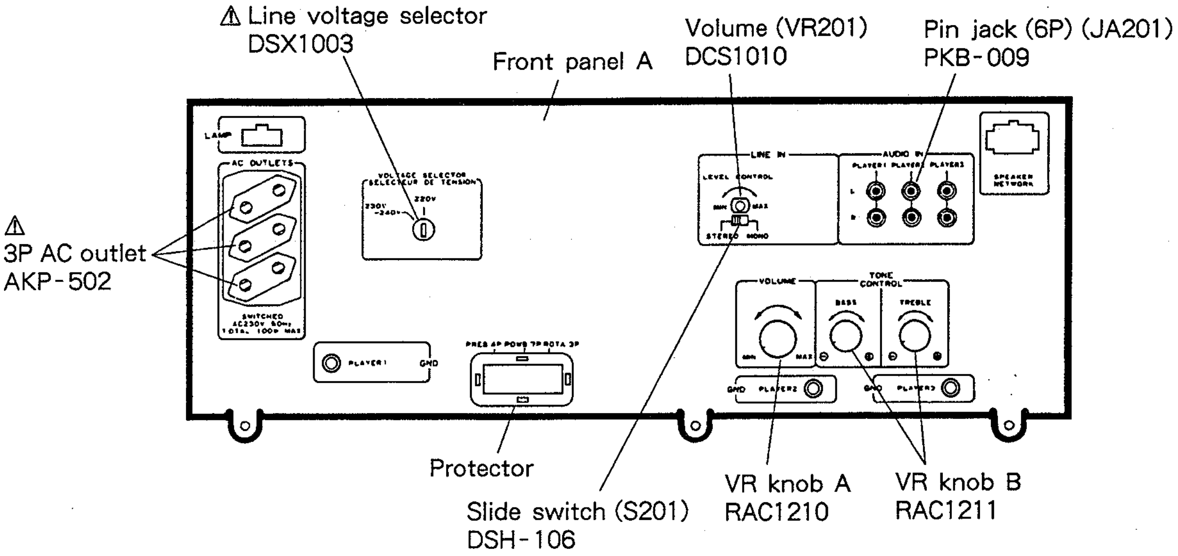

Signboard (upper)
DAH1507
Top door panel (upper)
DNK1610
⚠
Menu glass
DAN1010
Top door
panel (side)
DNK1612
LASER JUKE
COMPACT DISC JUKEBOX
PIONEER
Top door panel
(under)
DNK1737
Signboard (under)
DAH1380
Ornament sheet
DAH1443

●OPERATION SECTION

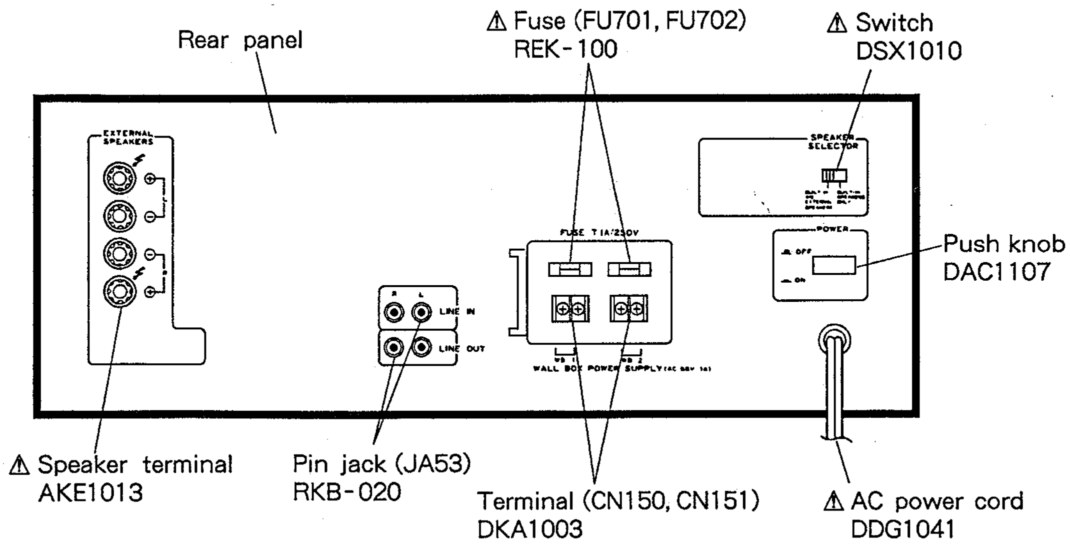

Coin insertion hole
DNS1044
Coin-return lever sheet A
DAH1183
Coin-return lever
DAD1001
Coin-return lever sheet B
DAH1184
DEPOSIT CASH
MAKE SELECTION
HOW TO SELECT
1 INSERT BILLS/COINS
PRICE OF SELECTIONS
3PLAYS FOR $1.00
7PLAYS FOR $2.00
18PLAYS FOR $5.00
2 SELECT MUSIC
3 PRESS CLEAR TO CORRECT
4 PRESS BEST HITS FOR MOST POPULAR SONGS
8.8.
8.8.8.8.
OPERATION KEY
1
2
3
4
5
6
7
8
9
0
CLEAR
BEST HITS
Key sheet
DAH1431
JUKEBOX MENU KEY
ROTATE MENU
Key sheet (B)
DAH1432

2.2 AMP SECTION

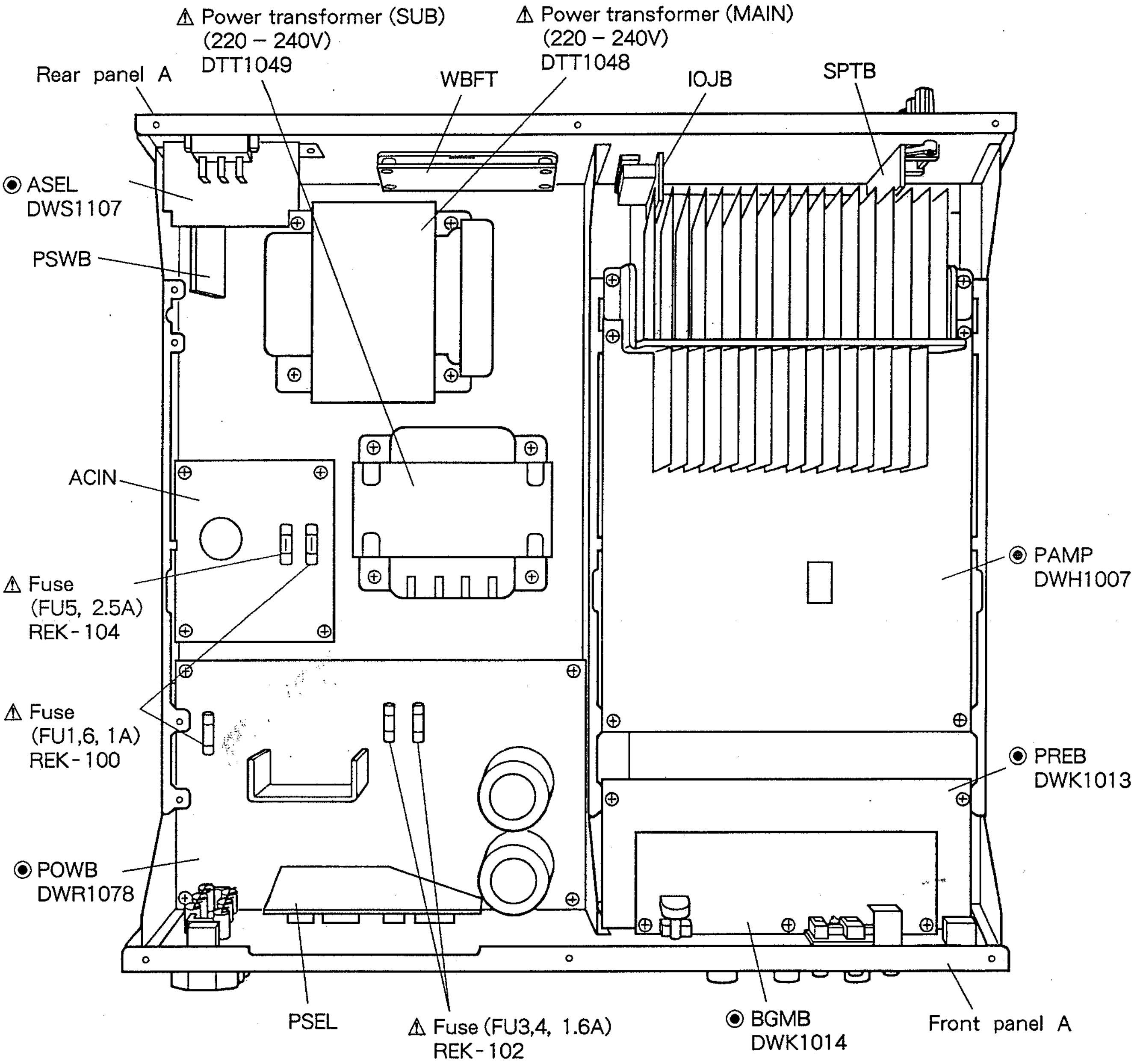
• FRONT VIEW


⚠ Line voltage selector
DSX1003
Front panel A
Volume (VR201)
DCS1010
Pin jack (6P) (JA201)
PKB-009
⚠
3P AC outlet
AKP-502
LAMP
AC OUTLETS
SWITCHED
AC230V 50Hz
TOTAL 100W MAX
VOLTAGE SELECTOR
SÉLECTEUR DE TENSION
230V
-240V
220V
LINE IN
LEVEL CONTROL
MIN
MAX
STEREO
MONO
AUDIO IN
PLAYER1
PLAYER2
PLAYER3
L
R
SPEAKER NETWORK
VOLUME
TONE CONTROL
BASS
TREBLE
MIN
MAX
⊖
⊕
⊖
⊕
PLAYER1
GND
PRES 4P
POWS 7P
ROTA 3P
GND
PLAYER2
GND
PLAYER3
Protector
Slide switch (S201)
DSH-106
VR knob A
RAC1210
VR knob B
RAC1211

• REAR VIEW

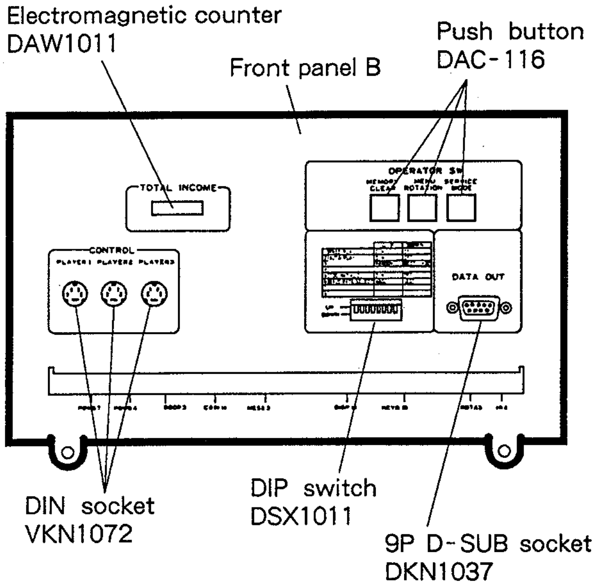

Rear panel
⚠ Fuse (FU701, FU702)
REK-100
⚠ Switch
DSX1010
EXTERNAL SPEAKERS
⊕
⊖
⊖
⊕
SPEAKER SELECTOR
FUSE T1A/250V
POWER
OFF
ON
Push knob
DAC1107
R
L
LINE IN
LINE OUT
WB 1
WB 2
WALL BOX POWER SUPPLY
⚠ Speaker terminal
AKE1013
Pin jack (JA53)
RKB-020
Terminal (CN150, CN151)
DKA1003
⚠ AC power cord
DDG1041

● TOP VIEW

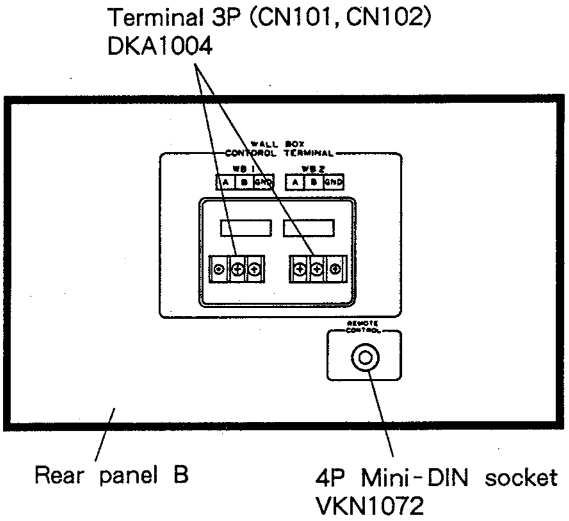

⚠ Power transformer (SUB)
(220 – 240V)
DTT1049
⚠ Power transformer (MAIN)
(220 – 240V)
DTT1048
Rear panel A
WBFT
IOJB
SPTB
◉ ASEL
DWS1107
PSWB
ACIN
⚠ Fuse
(FU5, 2.5A)
REK-104
⚠ Fuse
(FU1,6, 1A)
REK-100
◉ POWB
DWR1078
◉ PAMP
DWH1007
◉ PREB
DWK1013
PSEL
⚠ Fuse (FU3,4, 1.6A)
REK-102
◉ BGMB
DWK1014
Front panel A

2.3 COMMANDER SECTION

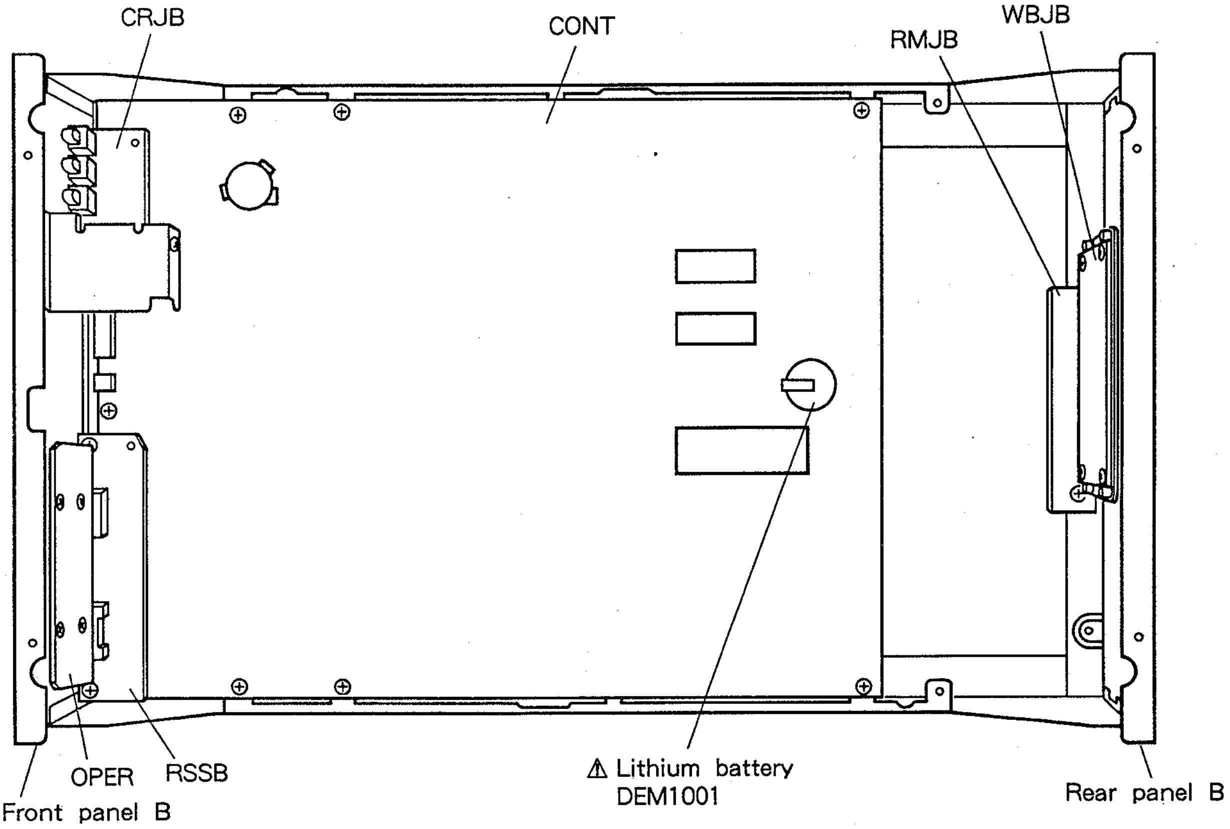
● FRONT VIEW


Electromagnetic counter
DAW1011
Front panel B
Push button
DAC-116
TOTAL INCOME
OPERATOR SW
MEMORY CLEAR
MENU ROTATION
SERVICE MODE
CONTROL
PLAYER1 PLAYER2 PLAYER3
DATA OUT
DIN socket
VKN1072
DIP switch
DSX1011
9P D-SUB socket
DKN1037

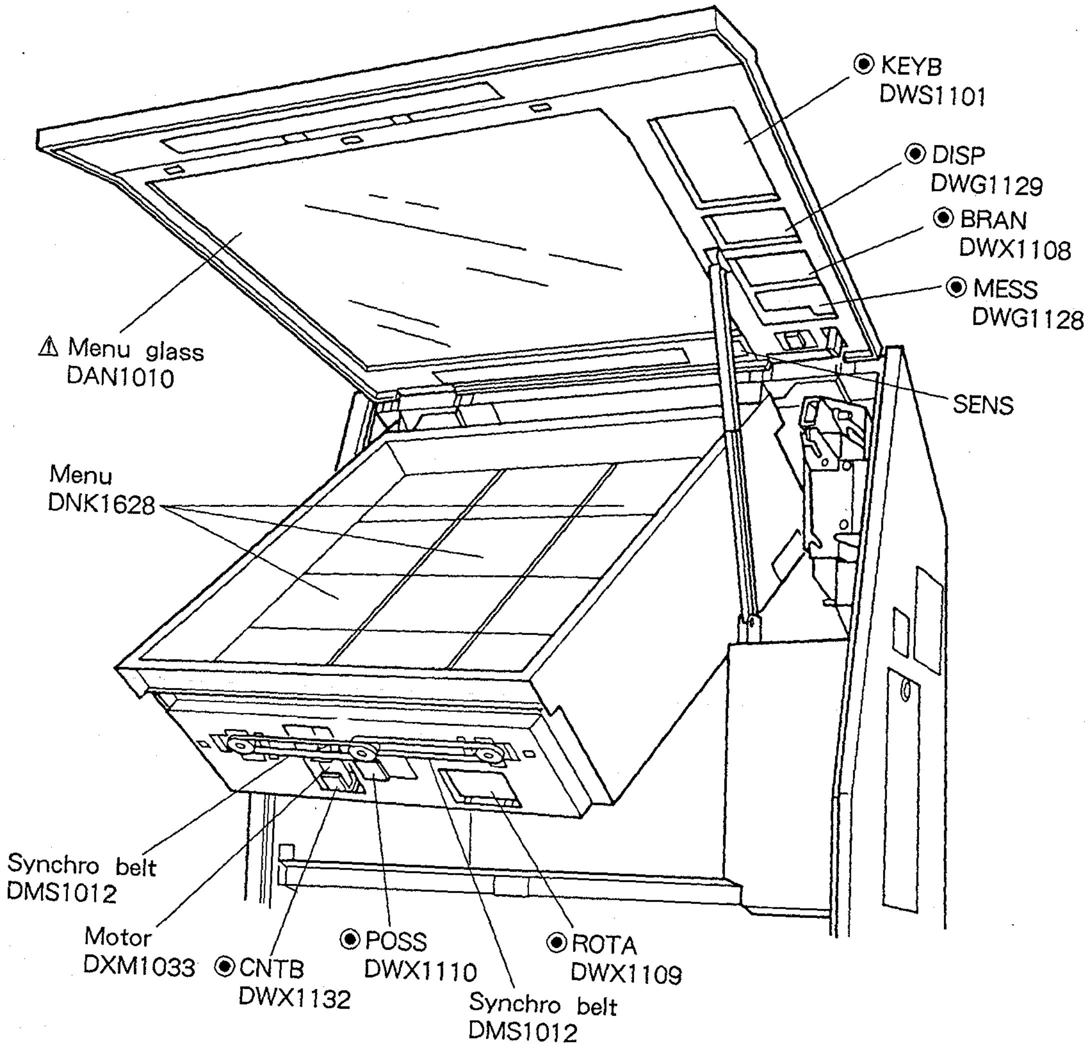
● REAR VIEW


Terminal 3P (CN101, CN102)
DKA1004
WALL BOX CONTROL TERMINAL
WB 1
WB 2
A
B
GND
A
B
GND
REMOTE CONTROL
Rear panel B
4P Mini-DIN socket
VKN1072

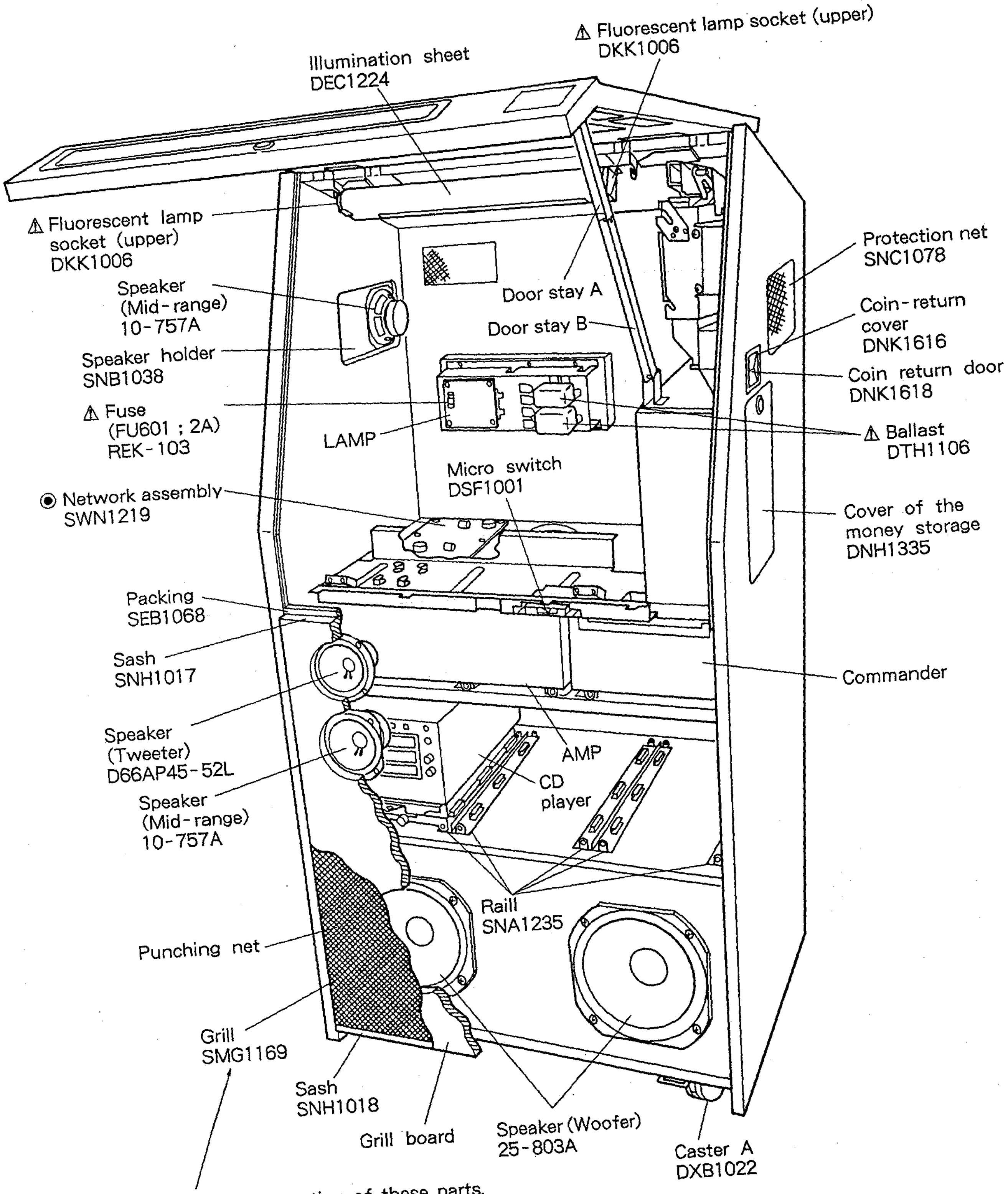
● TOP VIEW


CRJB
CONT
RMJB
WBJB
OPER
RSSB
Front panel B
⚠ Lithium battery
DEM1001
Rear panel B

2.4 REMOVING CONDITION OF THE UNDER LAMP ASSEMBLY

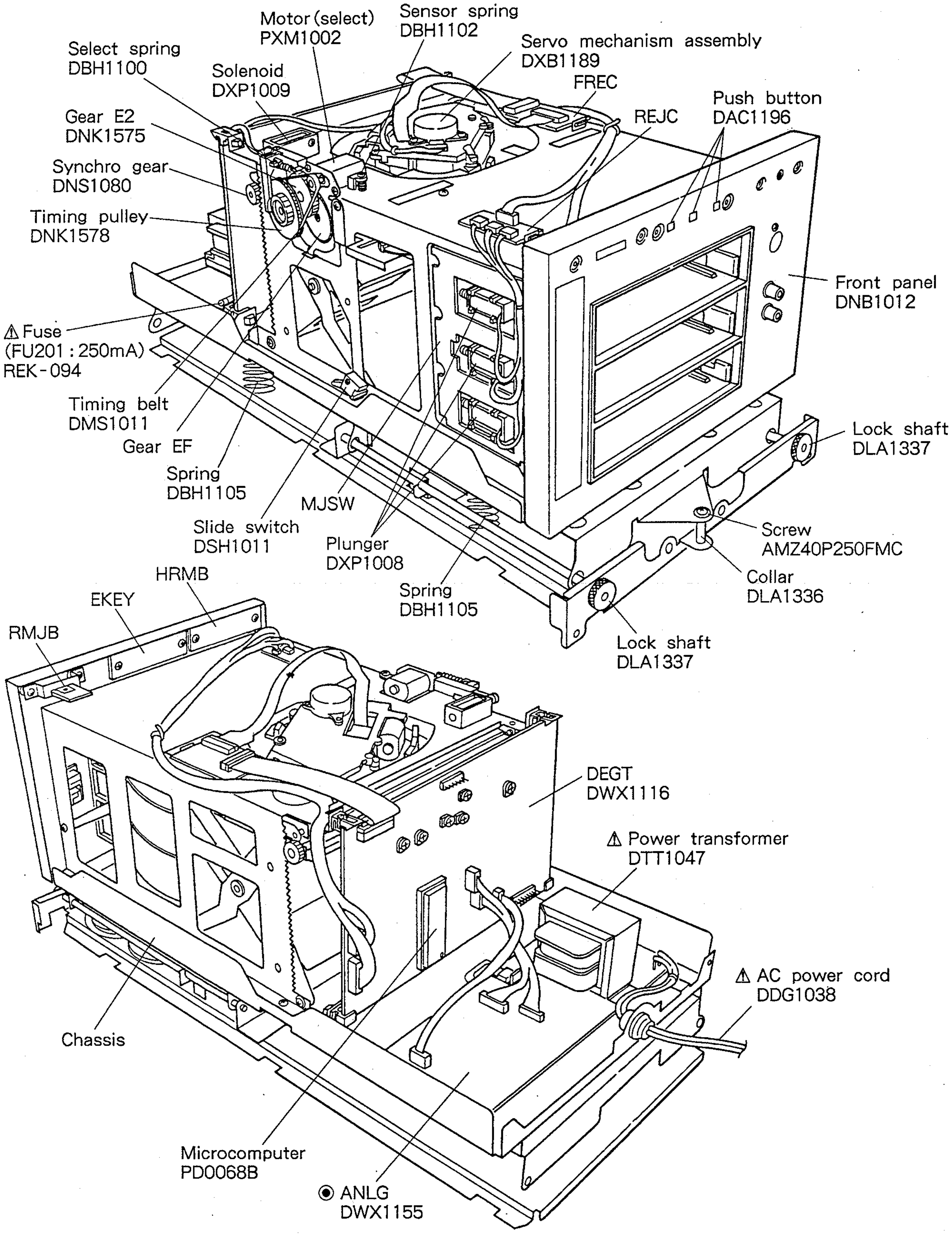

◉ KEYB
DWS1101
◉ DISP
DWG1129
◉ BRAN
DWX1108
◉ MESS
DWG1128
⚠ Menu glass
DAN1010
SENS
Menu
DNK1628
Synchro belt
DMS1012
Motor
DXM1033
◉ CNTB
DWX1132
◉ POSS
DWX1110
◉ ROTA
DWX1109
Synchro belt
DMS1012

2.5 REMOVING CONDITION OF THE MENU BOARD


Illumination sheet
DEC1224
⚠ Fluorescent lamp socket (upper)
DKK1006
⚠ Fluorescent lamp socket (upper)
DKK1006
Speaker (Mid-range)
10-757A
Speaker holder
SNB1038
⚠ Fuse (FU601 ; 2A)
REK-103
LAMP
Door stay A
Door stay B
Micro switch
DSF1001
◉ Network assembly
SWN1219
Protection net
SNC1078
Coin-return cover
DNK1616
Coin return door
DNK1618
⚠ Ballast
DTH1106
Cover of the money storage
DNH1335
Packing
SEB1068
Sash
SNH1017
Commander
Speaker (Tweeter)
D66AP45-52L
AMP
CD player
Speaker (Mid-range)
10-757A
Raill
SNA1235
Punching net
Grill
SMG1169
Sash
SNH1018
Grill board
Speaker (Woofer)
25-803A
Caster A
DXB1022

Note : As to the construction of these parts,
refer to the exploded view.

2.6 CD PLAYER SECTION


Motor (select)
PXM1002
Sensor spring
DBH1102
Select spring
DBH1100
Solenoid
DXP1009
Servo mechanism assembly
DXB1189
FREC
REJC
Push button
DAC1196
Gear E2
DNK1575
Synchro gear
DNS1080
Timing pulley
DNK1578
Front panel
DNB1012
⚠ Fuse
(FU201 : 250mA)
REK-094
Timing belt
DMS1011
Gear EF
Spring
DBH1105
Lock shaft
DLA1337
MJSW
Slide switch
DSH1011
Plunger
DXP1008
Screw
AMZ40P250FMC
Collar
DLA1336
HRMB
EKEY
RMJB
Spring
DBH1105
Lock shaft
DLA1337
DEGT
DWX1116
⚠ Power transformer
DTT1047
⚠ AC power cord
DDG1038
Chassis
Microcomputer
PD0068B
◉ ANLG
DWX1155

3. DISASSEMBLY

3.1 REMOVING THE TOP DOOR ASSEMBLY

1. Open the menu door, and remove six screws ① and two R pins to remove the menu board assembly.

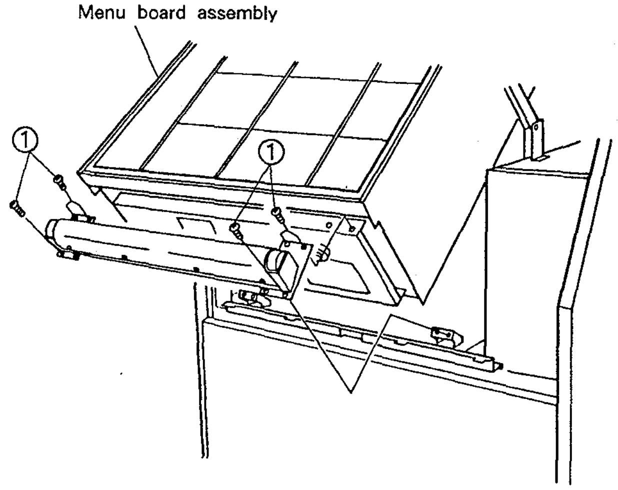

Menu board assembly
①
①

Fig. 3-1

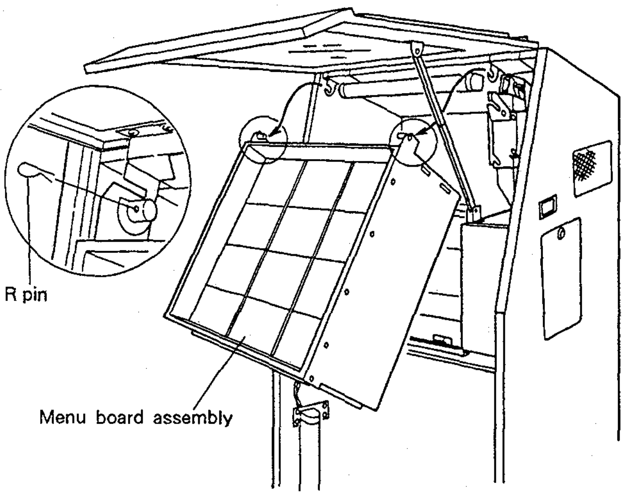

R pin
Menu board assembly

Fig. 3-2

2. Loosen four screws ② and remove two screws ③ to remove the upper lamp assembly.
3. Remove two screws ④ to remove the CA holder C assembly.

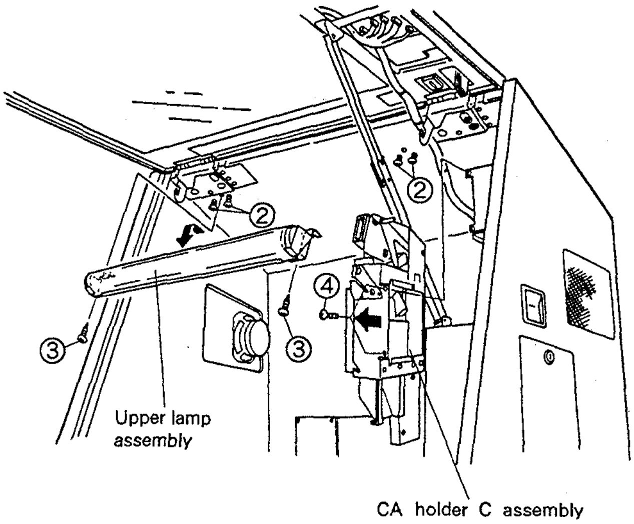

②
②
③
④
③
Upper lamp assembly
CA holder C assembly

Fig. 3-3

4. Remove six screws ⑤, two screws ⑥ and two screws ⑦ to remove the top door assembly.

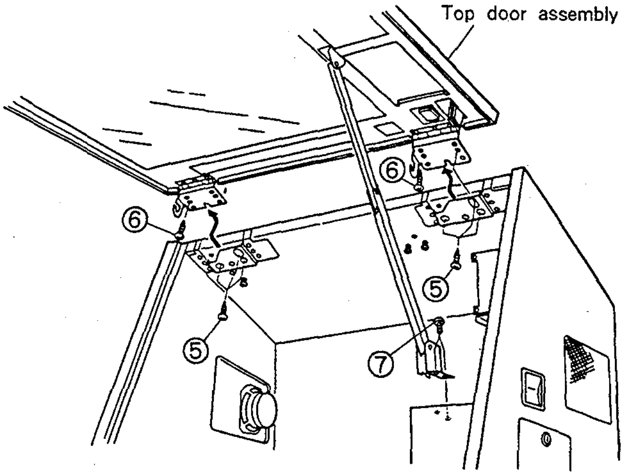

Top door assembly
⑥
⑥
⑤
⑤
⑦

Fig. 3-4

3.2 REMOVING THE MENU MOTOR ASSEMBLY

1. Remove two screws ① to remove the menu motor assembly.

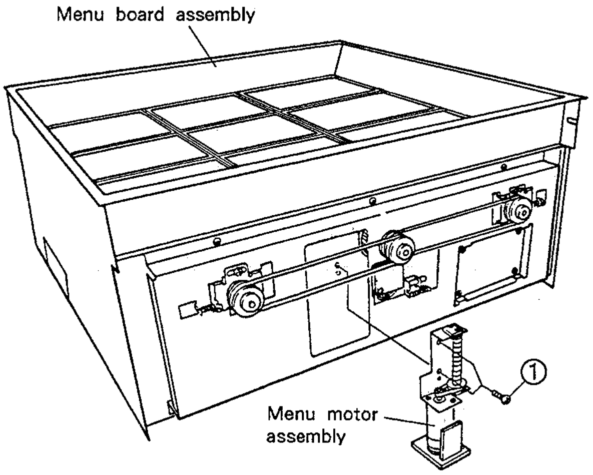

Menu board assembly
①
Menu motor assembly

Fig. 3-5

3.3 REMOVING THE SYNCHRO BELT

1. Loosen two screws ① and remove two springs with plier, and remove two synchro belts by pushing the synchro pulley in the direction of arrow.

Note : When the synchro belt is replaced, be sure to perform the three surfaces of the menu synchronous adjustment.

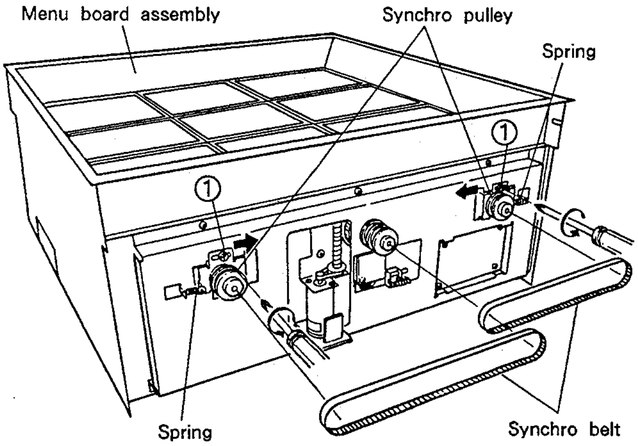

Menu board assembly
Synchro pulley
Spring
①
①
Spring
Synchro belt

Fig. 3-6

3.4 REMOVING THE LAMP AND NETWORK ASSEMBLY

1. Remove six screws ① to remove the network assembly.
2. Remove four screws ② to remove the LAMP.

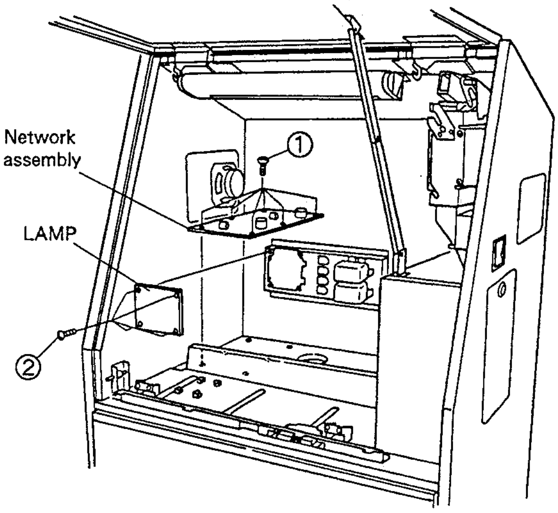

Network assembly
①
LAMP
②

Fig. 3-7

3.5 REMOVING THE ROTA AND POSS

1. Remove four screws ① to remove the ROTA.
2. Remove a screw ② to remove the POSS.

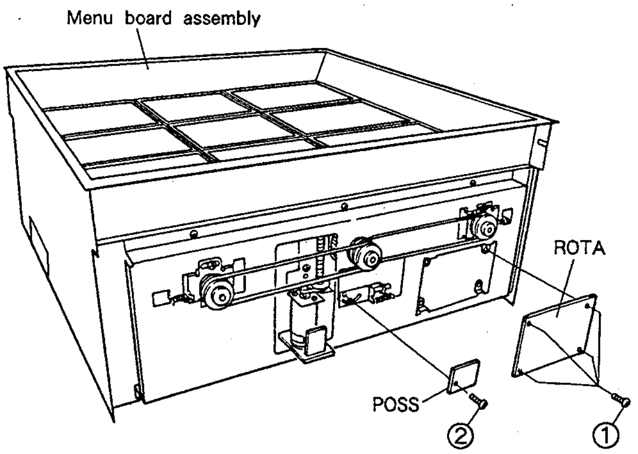

Menu board assembly
ROTA
POSS
②
①

Fig. 3-8

3.6 REMOVING THE MESS, BRAN, DISP AND KEYB

1. Remove four screws ① to remove the MESS.
2. Remove four screws ② to remove the BRAN.
3. Remove four screws ③ to remove the DISP.
4. Remove eight screws ④ to remove the KEYB.
5. Remove two screws ⑤ to remove the SENS.

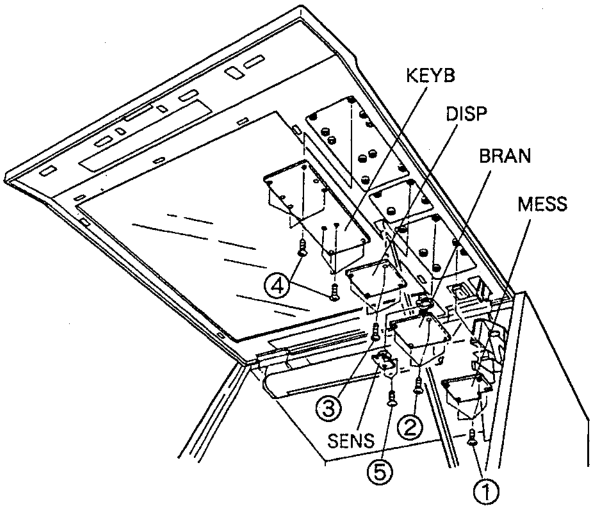

KEYB
DISP
BRAN
MESS
④
③
SENS
②
⑤
①

Fig. 3-9

3.7 REMOVING THE AMP, COMMANDER AND CD PLAYER

1. Remove three screws ① to remove the AMP.
2. Remove two screws ② to remove the commander.
3. Remove two screws ③ to remove the CD player.

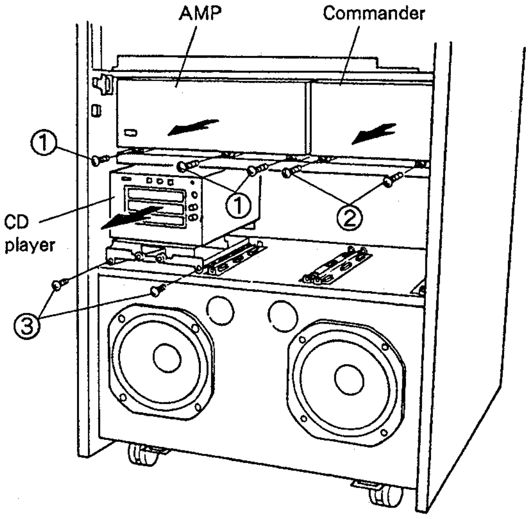

AMP
Commander
①
①
②
CD player
③

Fig. 3-10

3.8 REMOVING THE SPEAKER (WOOFER)

1. Remove four screws ① and disconnect the connector of speaker cord to remove the speaker.

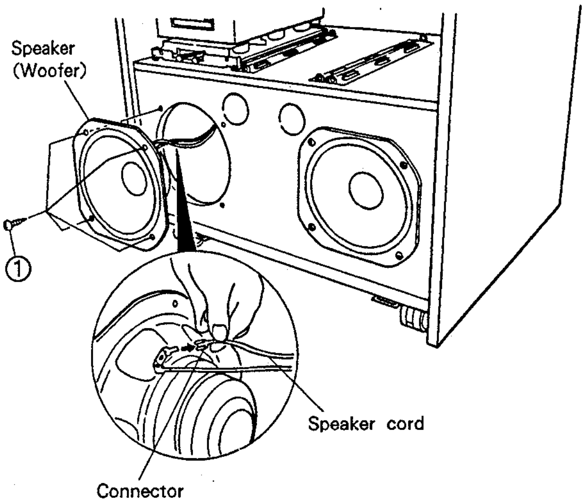

Speaker (Woofer)
①
Speaker cord
Connector

Fig. 3-11

3.9 REMOVING THE GLASS

1. Remove the top door assembly. (Refer to section 3.1.)
2. Set the glass side of top door assembly to the downward. Remove thirty-seven screws ① to remove the top door base, then remove the glass.

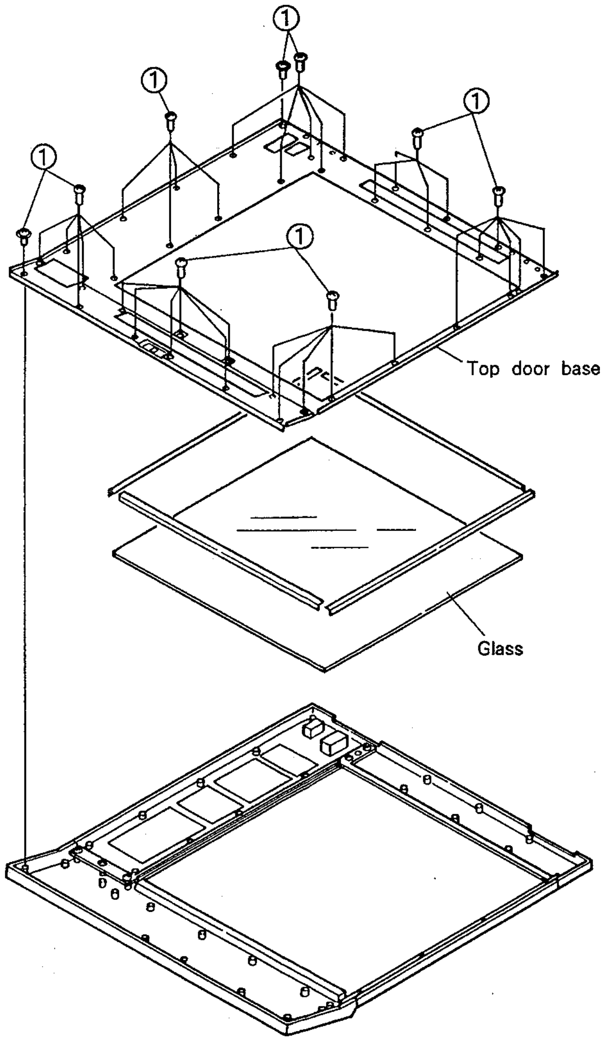


Fig. 3-12

3.10 REMOVING THE GLOW LAMP

Refer to the operating instructions (page 20).

4. P. C. BOARDS NAME

MAIN SECTION

MESS······MESSAGE
DISP·······DISPLAY
KEYB······KEYBOARD
BRAN······BRANCH
ROTA······ROTATION
POSS······POSITION SENSOR
LAMP······LAMP
CNTB······COUNTER BOARD
PAMP······POWER AMPLIFIER
SPTB·······SPEAKER TERMINAL BOARD
PREB·······PRE AMPLIFIER BOARD
POWB·····POWER BOARD
ACIN·······AC INPUT BOARD
PSEL·······PRIMARY VOLTAGE SELECTOR BOARD
ASEL·······AMPLIFIER VOLTAGE SELECTOR BOARD
PSWB······POWER SWITCH BOARD
CONT······CONTROL
OPER······OPERATION
CRJB······CD REMOTE JACK BOARD
RMJB······REMOTE CONTROL JACK BOARD
SENS······SENSOR
WBJB······WALL BOX JACK BOARD
RSSB······RS232C AND SW BOARD
BGMB·····BACK GROUND MUSIC BOARD
IOJB·······IN OUT JACK BOARD
WBFT······WALL BOX FUSE TERMINAL

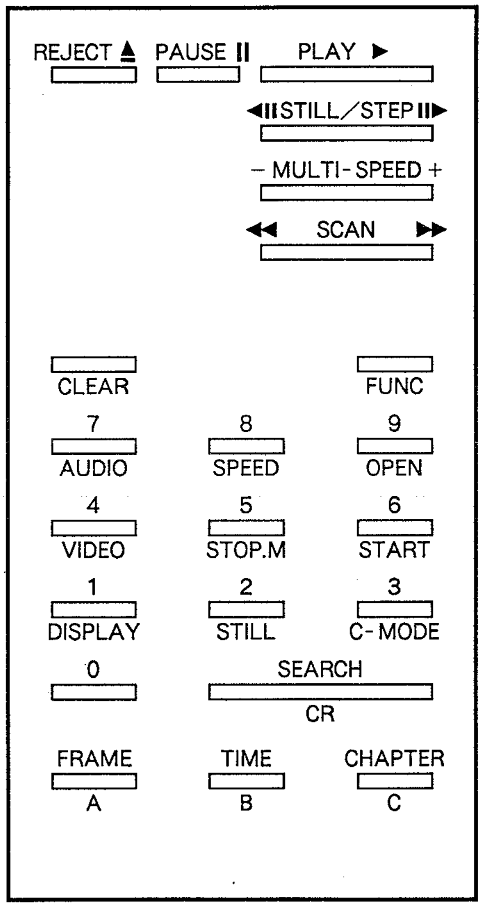
CD PLAYER SECTION

EKEY······EJECT KEY
DEGT······DIGITAL DECOADING UNIT
ANLG······ANALOG UNIT
DJAK······DIGITAL JACK
PJAK······PIN JACK
MJSW·····MAGAZINE EJECT SWITCH
SENS······SENSOR
REJC·······REJECT
FREC·······FLEXIBLE READER CONNECTOR
HRMB·····HOUR METER BOARD
RMJB······REMOTE JACK BOARD

5. SERVICE MODE

- As to using the service mode, refer to the operating instructions (pages 24 – 28).
  And also as to the cord table of the service mode, refer to the operating instructions (pages 20 – 23).
- Shows the function table of the remote control (RU-V101) for service as follows. When operating the CD changer section directly, it is able to operate as shown in the below by connect the wired-remote control to the CD chager.

5.1 FUNCTION TABLE OF THE REMOTE CONTROL FOR SERVICE


REJECT ▲
PAUSE II
PLAY ▶
◀II STILL/STEP II▶
– MULTI-SPEED +
◀◀ SCAN ▶▶
CLEAR
FUNC
7
AUDIO
8
SPEED
9
OPEN
4
VIDEO
5
STOP.M
6
START
1
DISPLAY
2
STILL
3
C-MODE
0
SEARCH
CR
FRAME
A
TIME
B
CHAPTER
C

*1	REJECT		: Spinde stop
*1	PAUSE		: Pause
*1	PLAY		: Play
*2	STILL/STEP II▶		: Disc select
*2	STILL/STEP ◀II		: Disc return
*2	MULTI-SPEED +		: Test command
*2	MULTI-SPEED –		: Test command
*1	SCAN ▶▶		: Scan fwd
*1	SCAN ◀◀		: Scan rev
*1	CLEAR		: Clear
*2	FRAME		: Frame set
*2	TIME		: Time set
*2	CHAPTER		: Track set
*1	SEARCH		: Search
*1	10key		: Numerical input
	DISPLAY	(FUNC + 1)	: no entry
	STILL	(FUNC + 2)	: no entry
	C-MODE	(FUNC + 3)	: no entry
	VIDEO	(FUNC + 4)	: no entry
*1	STOP.M	(FUNC + 5)	: Stop marker
*1	START	(FUNC + 6)	: Start
	AUDIO	(FUNC + 7)	: no entry
	SPEED	(FUNC + 8)	: no entry
*1	OPEN	(FUNC + 9)	: Magazine eject

*1 ··················Normal function command
*2 ··················Function command is different from the LD-V530.
Not marked ······No entry command

● Test command

0 + MULTI-SPEED (+, –) keys : LD-ON
1 + MULTI-SPEED (+, –) keys : FOCUS IN
2 + MULTI-SPEED (+, –) keys : Spindle kick
3 + MULTI-SPEED (+, –) keys : Tracking and slider servo ON
4 + MULTI-SPEED (+, –) keys : Slider fwd (500ms)
5 + MULTI-SPEED (+, –) keys : Slider rev (500ms)
]Stop by MULTI-SPEED (+, –) key
6 + MULTI-SPEED (+, –) keys : Tracking and slider servo OFF
7 + MULTI-SPEED (+, –) keys : Slider stop and spindle stop
8 + MULTI-SPEED (+, –) keys : Slider stop and spindle stop
9 + MULTI-SPEED (+, –) keys : LD-OFF

6. NOTES ON REPLACING THE LITHIUM BATTERY AND RAM (IC2 : HM62256LP-12)

- When replacing the Lithium battery (DEM1001) or the RAM (IC2 : HM62256LP-12) in the CONT unit of the commander block, clear RAM data in the following manner.
  If the data is not cleared, a malfunction may occur.

● How to clear

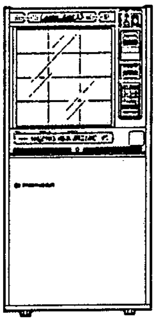
A If the accessory wired-remote control of the CJ-V50A is existed, insert the wired-remote control (accessory of the CJ-V50A) to the mini DIN connector (4P) on the rear panel of the commander.

B If the accessory wired-remote control of the CJ-V50A is not existed, connect four pins of the mini DIN connector (4P) on the RMJB unit to the chassis (GND).

1. Set the power switch to OFF and all the function switches of the commander block to ON.
2. While simultaneously pressing four keys, the volume + and − keys and the cancel A and B keys on the remote control unit, set the power switch to ON. A buzzer sounds in a few seconds, indicating that the clear operation is completed.
   (Note : An error may occur if you set the power switch to OFF while pressing these four keys.)
   When the data is cleared, the rate settings return to their default values and all other data become 0. Be careful when performing this operation as it sets even the non-resettable data all to 0.

PIONEER
The Art of Entertainment

Service Manual



ORDER NO.
ARP2122

COMPACT DISC JUKEBOX

CJ-V50
PD-MV55

- Refer to the service manual (1) ARP2121, CJ-V50.

- This manual is applicable to the CJ-V50/HEM and PD-MV55/WEM types.
- PD-MV55/WEM type is a optional CD player of the CJ-V50/HEM type.
- PD-MV55/WEM type is the same as the built-in CD player of the CJ-V50/HEM type except packing and accessory parts.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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ISI NOV. 1990 Printed in Japan

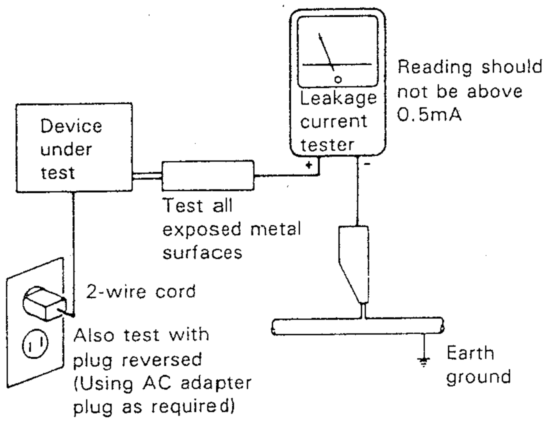
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Device under test
Leakage current tester
Reading should not be above 0.5mA
+
-
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

WARNING!

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below.
Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.
The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or a additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

ADVARSEL!

Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Denne advarsel or angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anveisning.
Batterierne må kun udskiftes med batterier af samme type og mærke.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

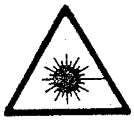
Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier.
Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

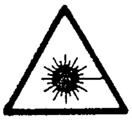


LASER
Kuva 1
Lasersateilyn varoitusmerkki

WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF HIGHER CLASS THAN 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

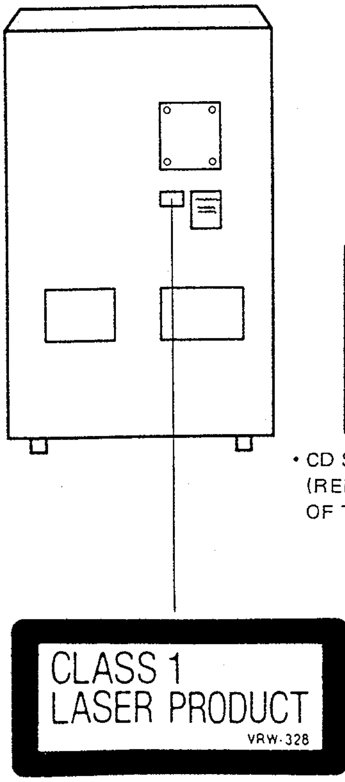
LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm



LASER
Picture 1
Warning sign for laser radiation

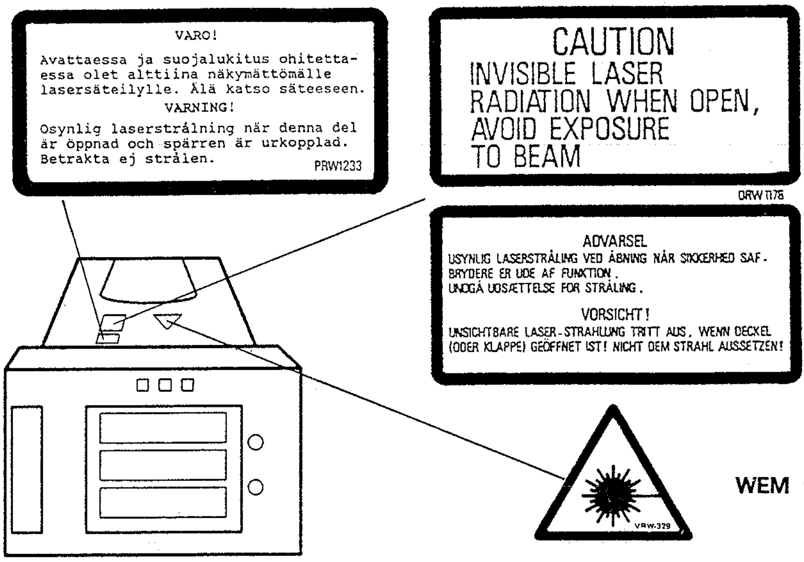
LABEL CHECK

• MAIN SECTION (REAR SIDE)



CLASS 1
LASER PRODUCT
VRW-328

HEM type



VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!
Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
PRW1233

CAUTION
INVISIBLE LASER
RADIATION WHEN OPEN,
AVOID EXPOSURE
TO BEAM
ORW1176

WEM type

ADVARSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAFBRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT!
UNSICHTBARE LASER-STRAHLUNG TRITT AUS, WENN DECKEL (ODER KLAPPE) GEÖFFNET IST! NICHT DEM STRAHL AUSSETZEN!

WEM type

• CD SECTION
(REMOVING CONDITION
OF THE BONNET COVER)

Additional Laser Caution

1. The player microcomputer checks the inserting condition of magazines A, B and C by using the combined signals of the SENS1 (S804), SENS2 (S805), SENS3 (S806), LOCK1 (S801), LOCK2 (S802) and LOCK3 (S803) switches. It is after these three magazines are fully inserted that commands from the control microcomputer are accepted. The laser diode is turned ON for illumination by outputting the laser diode ON signal from the control microcomputer when the CLAMP switch (S1001) (DSK1001), which signals that the tray is to be pulled from the magazine and detects clamping condition, is set to ON and the player receives the "rising command" in the disc clamping condition. If no disc is available, it turns OFF after 20 seconds. The illuminated laser diode goes out when receiving a "Reject command", a "disc change command" or a "magazine eject command."
The laser diode continues to oscilllate when pin ㉙ of CXA1081S (IC1) is connected to GND or to pin ⑤.
2. If the fault condition described in 1 is induced with the cover open and with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a class 1 or higher laser beam.

2. EXPLODED VIEWS AND PARTS LIST

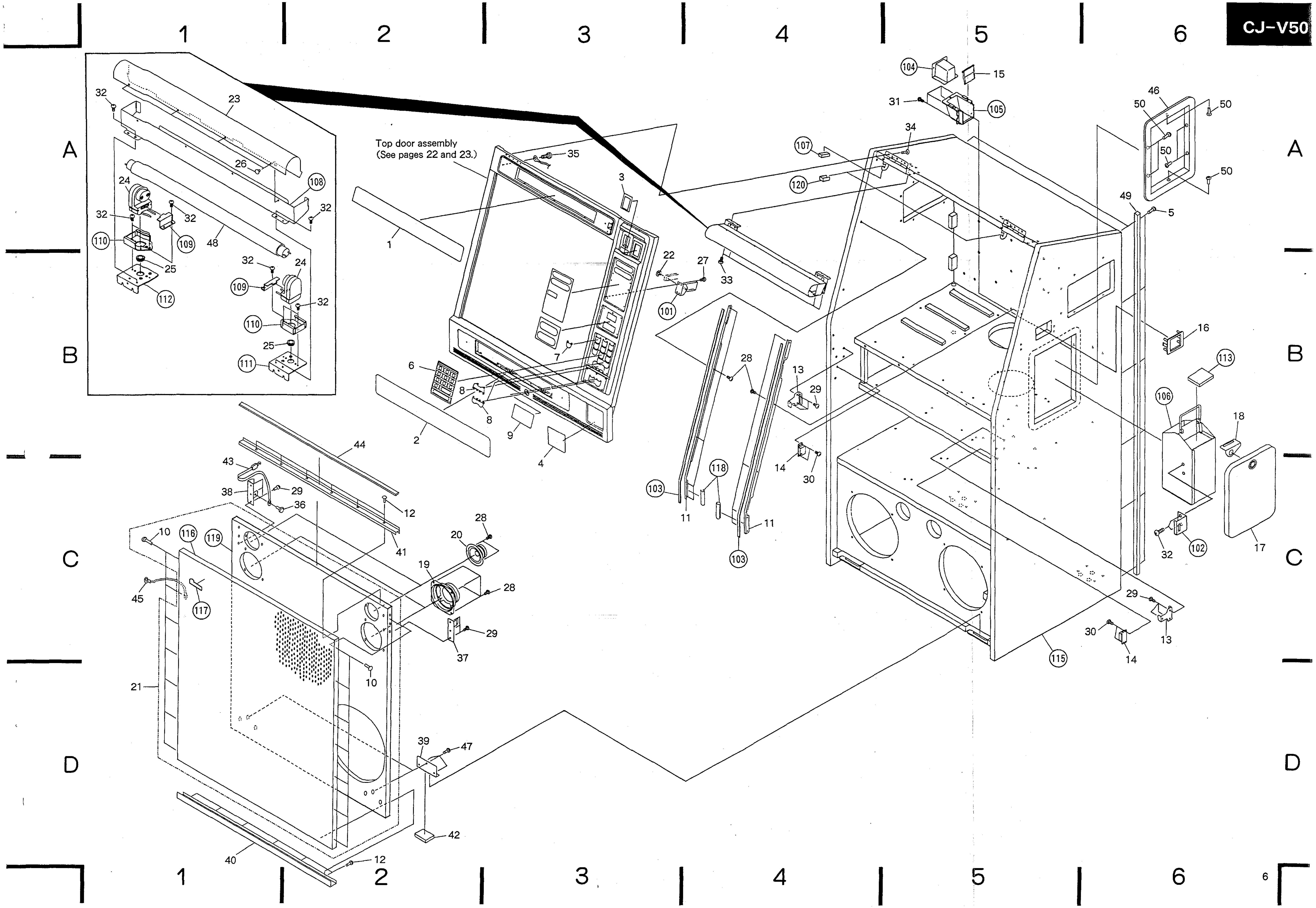
NOTES :
- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

2.1 MAIN SECTION

2.1.1 EXTERIOR (1)

Parts List

Mark	No.	Part No.	Description
	1	DAH1507	Sign board (upper)
	2	DAH1380	Sign board (under)
	3	DAH1183	Coin-return lever sheet A
	4	DAH1443	Ornament sheet
	5	SBA-194	Screw
	6	DAH1431	Key sheet
	7	DNK1236	Key knob A
	8	DNK1214	Key knob B
	9	DAH1432	Key sheet (B)
	10	CWC31P200FZK	Screw
	11	SNB1035	Door stopper
	12	RWC31P200FUC	Screw
	13	SNB1037	Hook holder
	14	SNX1034	Magnet catch
	15	DNK1618	Coin-return door
	16	DNK1616	Coin-return hole cover
	17	DNH1335	Cover of the money storage
	18	DNF1256	Reinforced plate
	19	10-757A	Speaker (Mid-range)
	20	D66AP45-52L	Speaker (Tweeter)
	21	SMG1169	Grill
	22	YE30FUC	E ring ϕ3
	23	DEC1224	Illumination sheet
⚠	24	DKK1006	Fluorescent lamp socket (upper)
	25	DEC1220	Bushing
	26	DEC-176	Plastic rivet
	27	PMH30P060FMC	Screw
	28	TNC35P140FZK	Screw
	29	SBA1061	Screw
	30	RWC35P160FZK	Screw
	31	IPZ30P080FMC	Screw
	32	BBZ30P060FMC	Screw
	33	DBA1007	Screw (3.5 × 12mm)
	34	PMB40P080FMC	Screw
	35	IPZ30P080FMC	Screw
	36	PMA60P100FMC	Screw
	37	SNB1039	Catch plate L
	38	SNB1040	Catch plate R
	39	SNB1041	Door hinge
	40	SNH1018	Sash
	41	SNH1017	Sash
	42	SEB1072	Cushion
	43	SEW1014	Safety belt
	44	SEB1068	Packing
	45	SDF1013	Earth lug assembly
	46	SNA1233	Frame
	47	PMB50P160FZK	Screw
	48	DEL-110	Fluorescent lamp
	49	SLH1050	Rail assembly
	50	CWC35P200FZK	Screw
	101		DS holder assembly
	102		Key plate (B)
	103		Shield packing (B)
	104		Coin guide (B)
	105		Coin-return tray
	106		Coin box assembly
	107		Stopper B
	108		Reflection plate
	109		Socket holder (S)
	110		Socket holder (L)
	111		Lamp bracket (L)
	112		Lamp bracket (R)
	113		CB cushion
	114		Nut
	115		Cabinet
	116		Punching net
	117		Badge
	118		Tape A
	119		Grill board
	120		Stopper A



Top door assembly
(See pages 22 and 23.)

1
2
3
4
5
6
A
B
C
D
32
23
26
108
24
32
32
110
109
48
25
112
32
24
109
32
110
25
111
1
2
3
35
6
7
8
8
9
4
22
27
33
101
104
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105
34
107
120
46
50
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16
113
106
18
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102
32
13
29
14
30
28
103
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118
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103
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116
119
45
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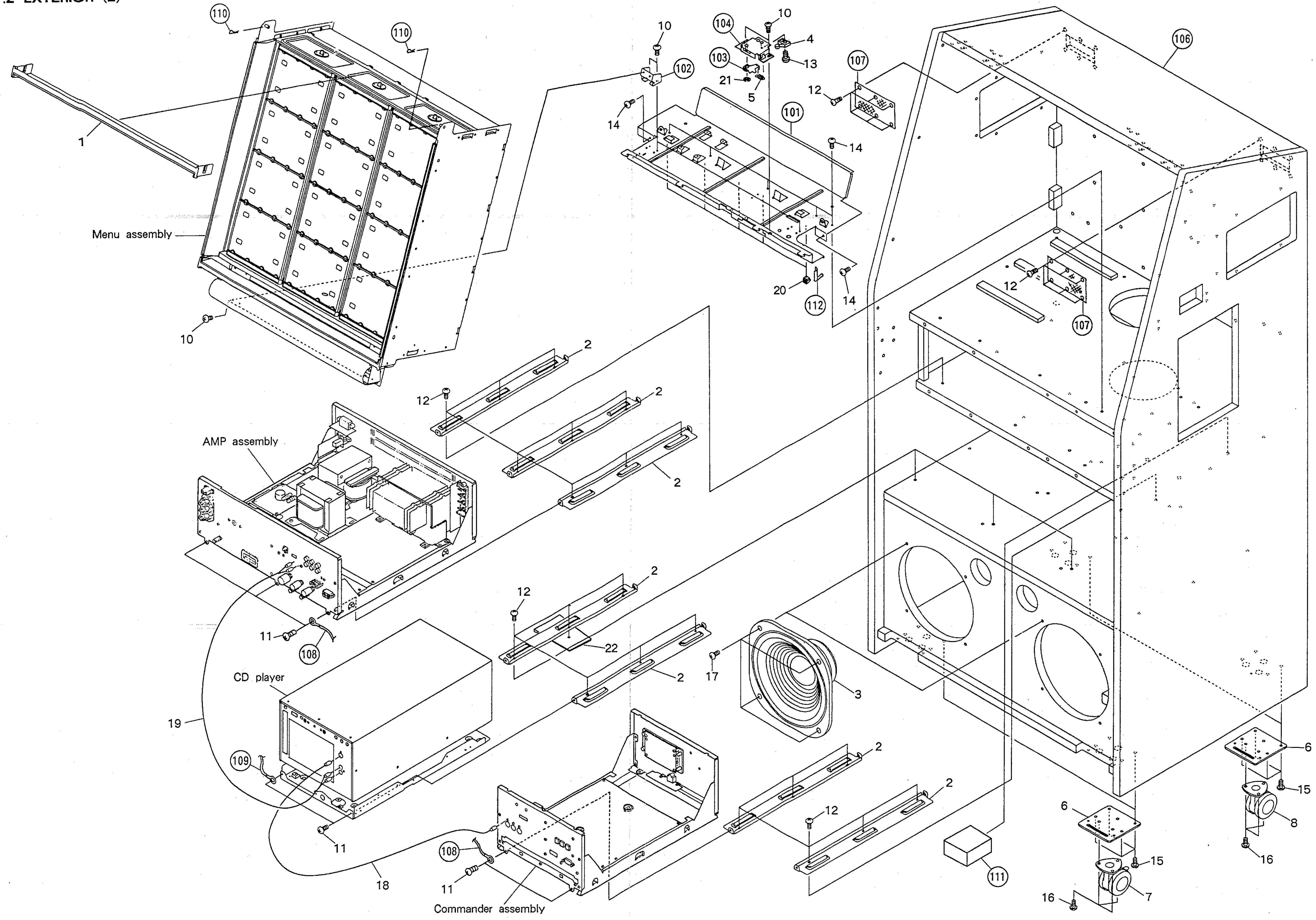
115

2.1.2 EXTERIOR (2)


A
B
C
D
110
110
1
Menu assembly
10
10
102
104
10
4
103
13
21
5
101
107
12
14
14
106
20
112
14
12
107
2
12
2
2
AMP assembly
12
2
11
108
22
2
17
3
CD player
19
109
11
108
18
11
Commander assembly
2
2
12
111
6
15
6
15
8
16
7
16

Parts List

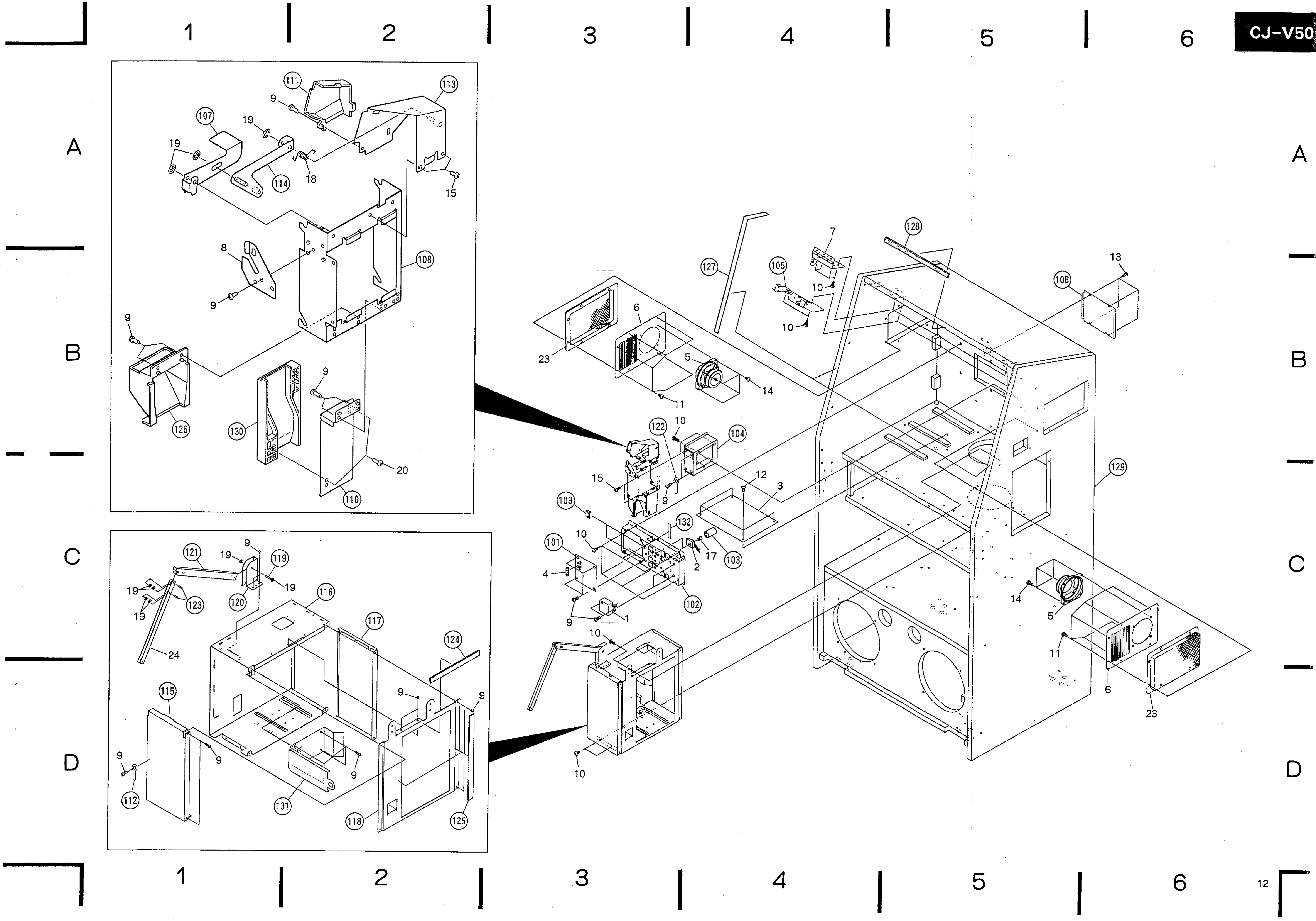
Mark	No.	Part No.	Description
	1	DNK1627	Plate
	2	SNA1235	Rail
	3	25-803A	Speaker (Woofer)
	4	DSF1001	Micro switch
	5	DBH1125	O spring
	6	SNA1220	Reinforced plate
	7	DXB1022	Caster A
	8	DXB1023	Caster B
	9	YE20FUC	E ring $\phi 2$
	10	BBZ30P060FMC	Screw
	11	AMZ40P080FMC	Screw
	12	TNC35P140FZK	Screw
	13	PMH20P100FMC	Screw
	14	DBA1007	Screw (3.5 × 12mm)
	15	SBA1068	Screw
	16	PMB50P300FMC	Screw
	17	SBA-194	Screw
⚠	18	DDE1034	Connection cord
	19	PDE1065	Cord with pin plug
	20	DEC1184	Shell clip
	21	YE30FUC	E ring $\phi 3$
	22	SNA1224	Earth plate
	101		Top door stay
	102		MB fixing plate
	103		Door SW cam
	104		Door switch holder assembly
	105		• • • • •
	106		Cabinet
	107		Airway cover
	108		Earth lug assembly
	109		Cord clamper
	110		R pin
	111		Magazine assembly
	112		Tape B

2.1.3 EXTERIOR (3)

Parts List

Mark	No.	Part No.	Description
⚠	1	DTH1106	Ballast
⚠	2	DKK1001	Glow lamp socket
◉	3	SWN1219	Network assembly
⚠	4	REK-103	Fuse (2A, FU601)
	5	10-757A	Speaker (Mid-range)
	6	SNB1038	Speaker holder
	7	DXB1193	Hinge
	8	DBK1015	Accepter plate spring
	9	BBZ30P060FMC	Screw
	10	DBA1007	Screw (3.5 × 12mm)
	11	TNC35P140FZK	Screw
	12	AYC30P250FMC	Screw
	13	AMZ30P060FZK	Screw
	14	BSZ40P060FZK	Screw
	15	BBZ40P080FMC	Screw
	16	BBZ30P080FMC	Screw
	17	PBZ30P120FMC	Screw
	18	DBH1037	CA spring
	19	YE30FUC	E ring ϕ 3
	20	IPZ30P080FMC	Screw
	21	PMB40P080FMC	Screw
	22	AMZ40P080FMC	Screw
	23	SNC1078	Protection net
	24	DND1022	Door stay B

Mark	No.	Part No.	Description
	101		LAMP
	102		Stay A
	103		Glow lamp
	104		CA holder A
	105		Hinge holder
	106		Rear plate
	107		CH lever B
	108		CA holder C assembly
	109		Edge guard (B)
	110		Coin guide cover
	111		Insertion guide
	112		Cord clamper
	113		HL holder assembly
	114		CH lever assembly A
	115		Bill holder (F)
	116		Bill holder (L)
	117		Bill holder (RE)
	118		Bill holder (R)
	119		DS shaft A
	120		DS base
	121		Door stay A
	122		Cord clamper
	123		DS shaft B
	124		Tape C
	125		Tape D
	126		Coin guide (C)
	127		Ornament sash
	128		Shield packing (A)
	129		Cabinet
	130		Coin guide (D)
	131		Key plate (A)
	132		Insulation sheet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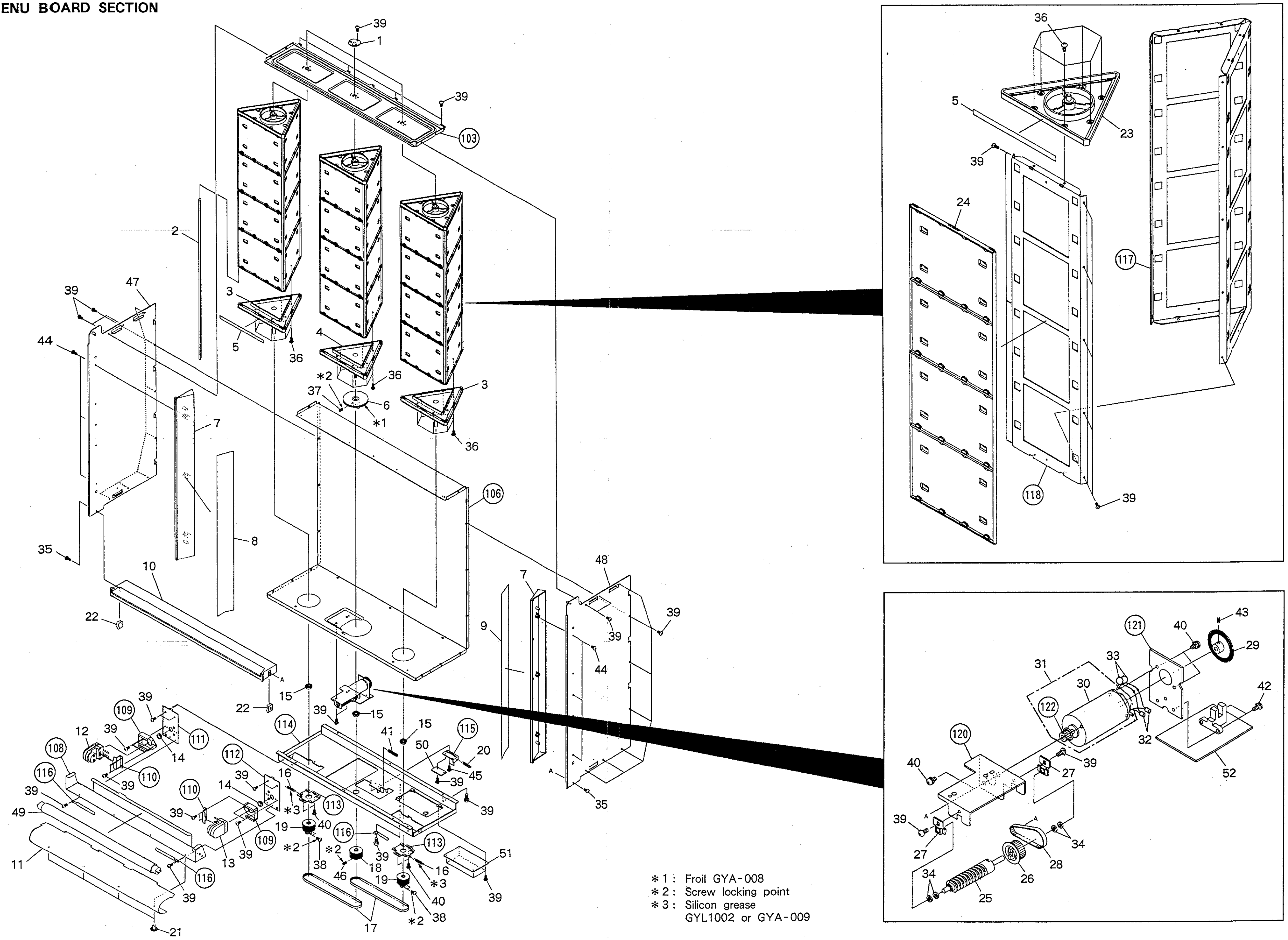
2.1.4 MENU BOARD SECTION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∗1 : Froil GYA-008
∗2 : Screw locking point
∗3 : Silicon grease
GYL1002 or GYA-009

Parts List

Mark	No.	Part No.	Description
	1	DNK1633	Shaft holder
	2	DNF1257	Corner edge
	3	DNK1629	Menu cap (L)
	4	DNK1630	Menu cap (M)
	5	DEC1252	Menu sheet
	6	DNK1621	Worm wheel
	7	DNK1626	Side ornament plate
	8	DEC1250	Side ornament plate sheet (L)
	9	DEC1251	Side ornament plate sheet (R)
	10	DNK1627	Ornament plate
	11	DEC1224	Illumination sheet
⚠	12	DKK1006	Fluorescent lamp socket (upper L)
⚠	13	DKK1007	Fluorescent lamp socket (under L)
	14	DEC1220	Bushing
	15	DXB-108	Bearing
	16	DBH1107	Tension spring (under)
	17	DMS1012	Synchro belt
	18	DNK1622	Center pulley
	19	DNK1623	Synchro pulley
	20	DBH1108	Adjustment spring
	21	DEC-176	Plastic rivet
	22	VBN-002	Speed nut
	23	DNK1632	Menu cap (U)
	24	DNK1628	Menu
	25	DLA1300	Worm gear
	26	DNK1620	Pulley
	27	DNK1624	Worm shaft holder
	28	DMS1006	S2M timing belt
	29	DXB1160	Encoder disc assembly
	30	DXM1033	Motor
	31	DXX1368	Motor assembly
	32	CEANP010M50	C702,C704
	33	CGDYX104M25	C701,C703
	34	WA42D080D050	Washer
	35	BBZ30P080FZK	Screw
	36	BBZ40P080FMC	Screw
	37	ZMD40H080FBT	Screw
	38	SMZ30H120FBT	Screw
	39	BBZ30P060FMC	Screw
	40	PMH30P060FMC	Screw
	41	SMZ30H200FMC	Screw
	42	BMZ26P060FMC	Screw
	43	ZMD26H030FBT	Screw
	44	BPZ30P080FCU	Screw
	45	AMZ30P060FZK	Screw
	46	ZMD40H080FBT	Screw
	47	DNA1070	Side frame (L)
	48	DNA1071	Side frame (R)
	49	DEL-110	Fluorescent lamp
◉	50	DWX1110	POSS
◉	51	DWX1109	ROTA
◉	52	DWX1132	CNTB
	101		• • • • •
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	103		Top cover
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	105		• • • • •
	106		Back frame
	107		• • • • •
	108		Reflection plate
	109		Socket holder (L)
	110		Socket holder (S)
	111		Lamp plate (L)
	112		Lamp plate (R)
	113		Tension plate (under)
	114		Under frame
	115		Adjustment plate
	116		Cord clamper
	117		Triangle frame (L)
	118		Triangle frame (S)
	119		• • • • •
	120		Motor holder
	121		Sensor holder
	122		Motor pulley

2.1.5 AMP SECTION

Parts List

Mark	No.	Part No.	Description
◉	1	DWR1078	POWB
◉	2	DWK1013	PREB
◉	3	DWH1007	PAMP
⚠	4	REK-100	Fuse (1A, FU1,FU6,FU701,FU702)
⚠	5	REK-102	Fuse (1.6A, FU3,FU4)
⚠	6	REK-104	Fuse (2.5A, FU5)
⚠	7	DTT1048	Main power transformer
⚠	8	AKP-502	3P AC outlet
⚠	9	DDG1041	AC power cord
⚠	10	CM-22B	Strain relief
	11	RAC1210	VR knob A
	12	RAC1211	VR knob B
	13	DLA-177	Staddle
	14	DAC1107	Push knob
	15	BBZ30P060FMC	Screw
	16	BBZ30P080FZK	Screw
	17	BBZ40P080FMC	Screw
	18	BBZ30P140FMC	Screw
	19	PMB40P080FMC	Screw
	20	AMZ30P060FZK	Screw
⚠	21	DTT1049	Sub power transformer
◉	22	DWS1107	ASEL
	23	DNK1893	Terminal cover
◉	24	DWK1014	BGMB

Mark	No.	Part No.	Description
	101		ACIN
	102		WBFT
	103		PSWB
	104		• • • • • •
	105		SPTB
	106		IOJB
	107		Side frame L
	108		Side frame R
	109		Center frame
	110		Front panel A
	111		Protector
	112		Wire clip
	113		Transformer frame
	114		Cord clamper
	115		Rear panel A
	116		P.C.B. stopper
	117		Heat sink
	118		PF holder
	119		Connector assembly
	120		Connector assembly
	121		Earth terminal
	122		PSEL
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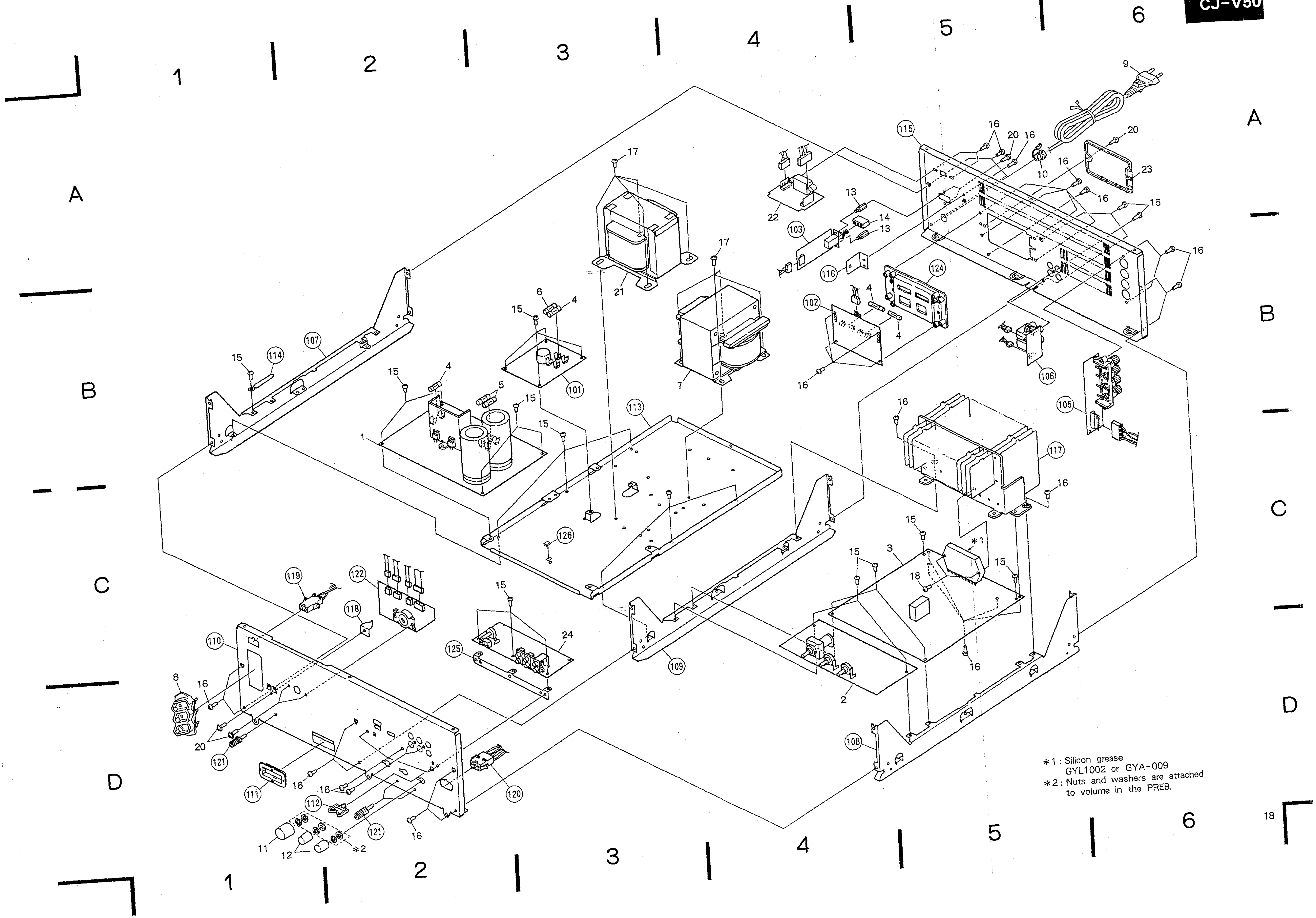
	124		Terminal holder
	125		P.C.B holder B
	126		Spacer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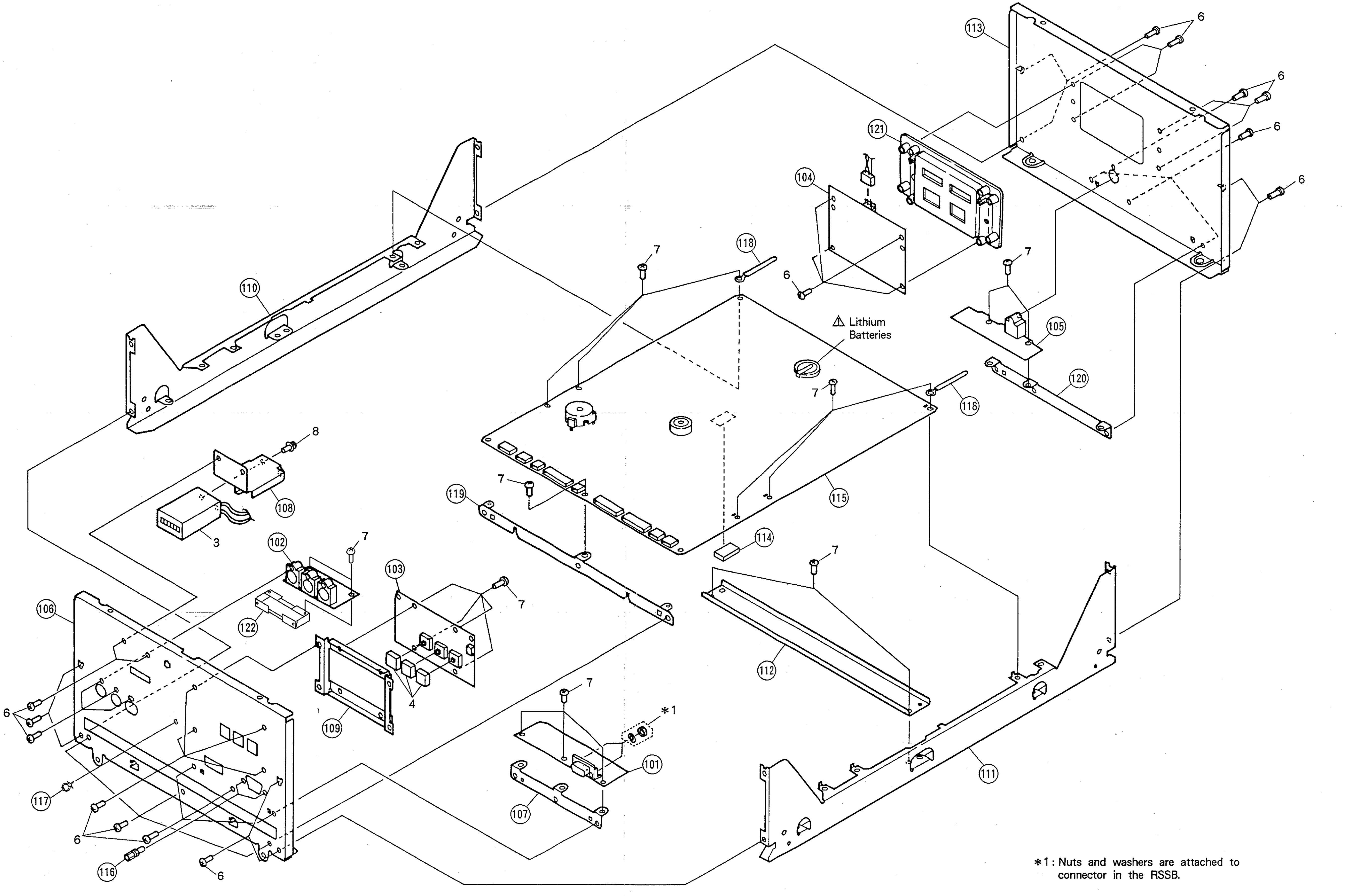
*1 : Silicon grease
GYL1002 or GYA-009

*2 : Nuts and washers are attached to volume in the PREB.

2.1.6 COMMANDER SECTION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*1 : Nuts and washers are attached to connector in the RSSB.

Parts List

Mark	No.	Part No.	Description
	1		• • • • •
⚠	2	DEM1001	Lithium batteries
	3	DAW1011	Electromagnetic counter
	4	DAC-116	Push button
	5		• • • • •
	6	BBZ30P080FZK	Screw
	7	BBZ30P060FMC	Screw
	8	PMB30P050FCU	Screw
	101		RSSB
	102		CRJB
	103		OPER
	104		WBJB
	105		RMJB
	106		Front panel B
	107		P.C.B holder A
	108		Counter holder
	109		P.C.B. holder
	110		Side frame L
	111		Side frame R
	112		Reinforced frame
	113		Rear panel B
	114		Cushion
	115		CONT
	116		Bolt
	117		Cord clamper E
	118		Cord clamper
	119		P.C.B holder C
	120		Terminal holder
	121		Terminal holder
	122		Terminal holder C

2.1.7 TOP DOOR SECTION

Parts List

Mark	No.	Part No.	Description
◉	1	DWG1128	MESS
◉	2	DWG1129	DISP
◉	3	DWS1101	KEYB
	4	DAH1184	Coin-return lever sheet B
	5	DAD1001	Coin-return lever
	6	DBH1033	Coin-return lever spring
	7	DNS1044	Coin insertion hole
	8		• • • • •
	9	DNK1609	Operation panel
	10	DNK1610	Top door panel (upper)
	11	DNK1612	Top door panel (side)
	12	DNK1737	Top door panel (under)
	13	DBH1034	Lock spring
◉	14	DWX1108	BRAN
	15		• • • • •
	16		• • • • •
⚠	17	DAN1010	Menu glass
	18	BPZ30P080FCU	Screw
	19	PMH30P120FMC	Screw
	20	IPZ30P080FMC	Screw
	21	BBZ30P060FMC	Screw
	22	DEC1356	IR filter

Mark	No.	Part No.	Description
	101		SENS
	102		Coin-return lever fixing plate
	103		Coin slit
	104		Top door base
	105		Top door lock plate
	106		Lock plate stopper
	107		Cord clamper
	108		Glass sash
	109		Earth lug assembly

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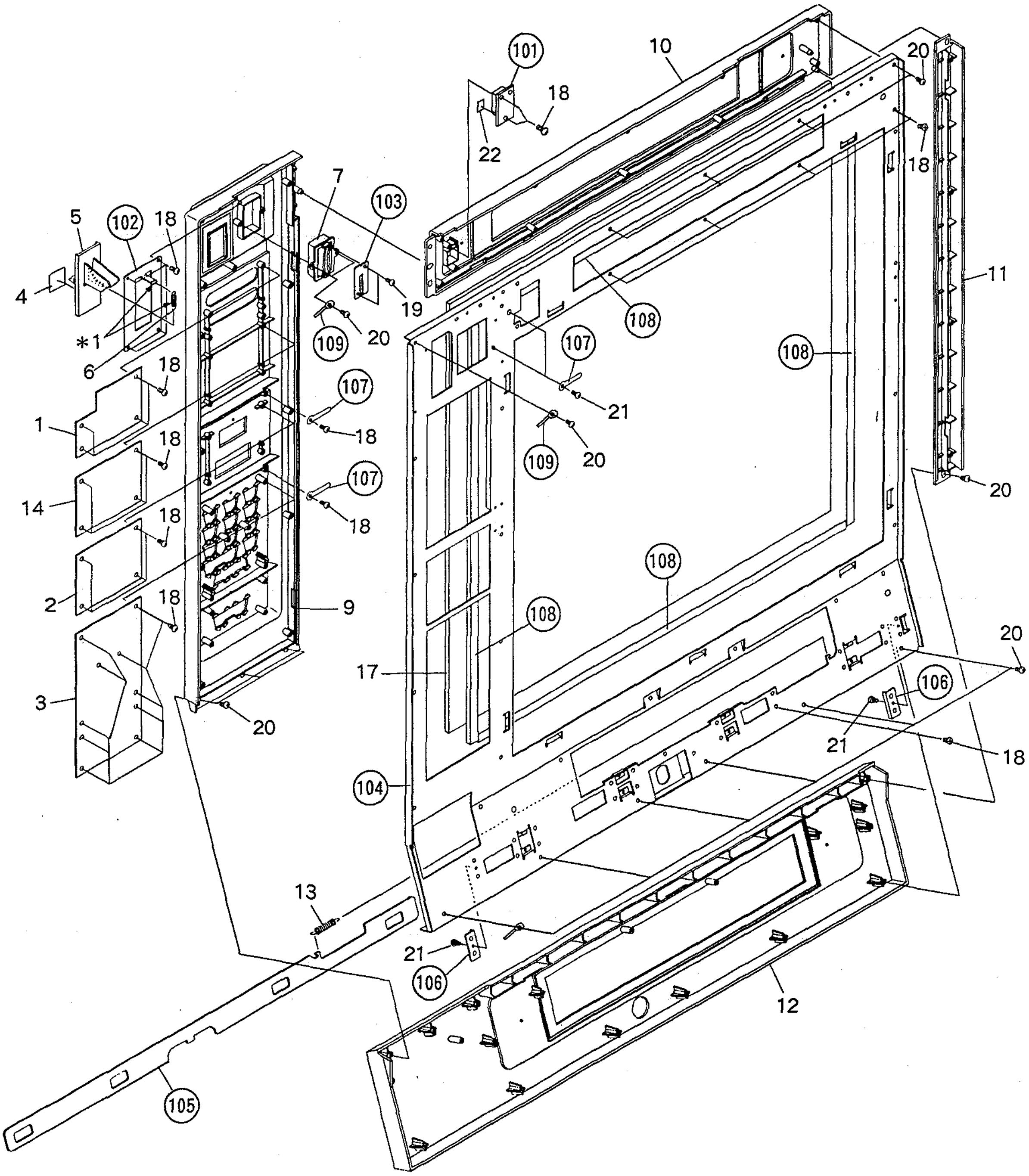
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*1 : Silicon Adhesive GYL-014

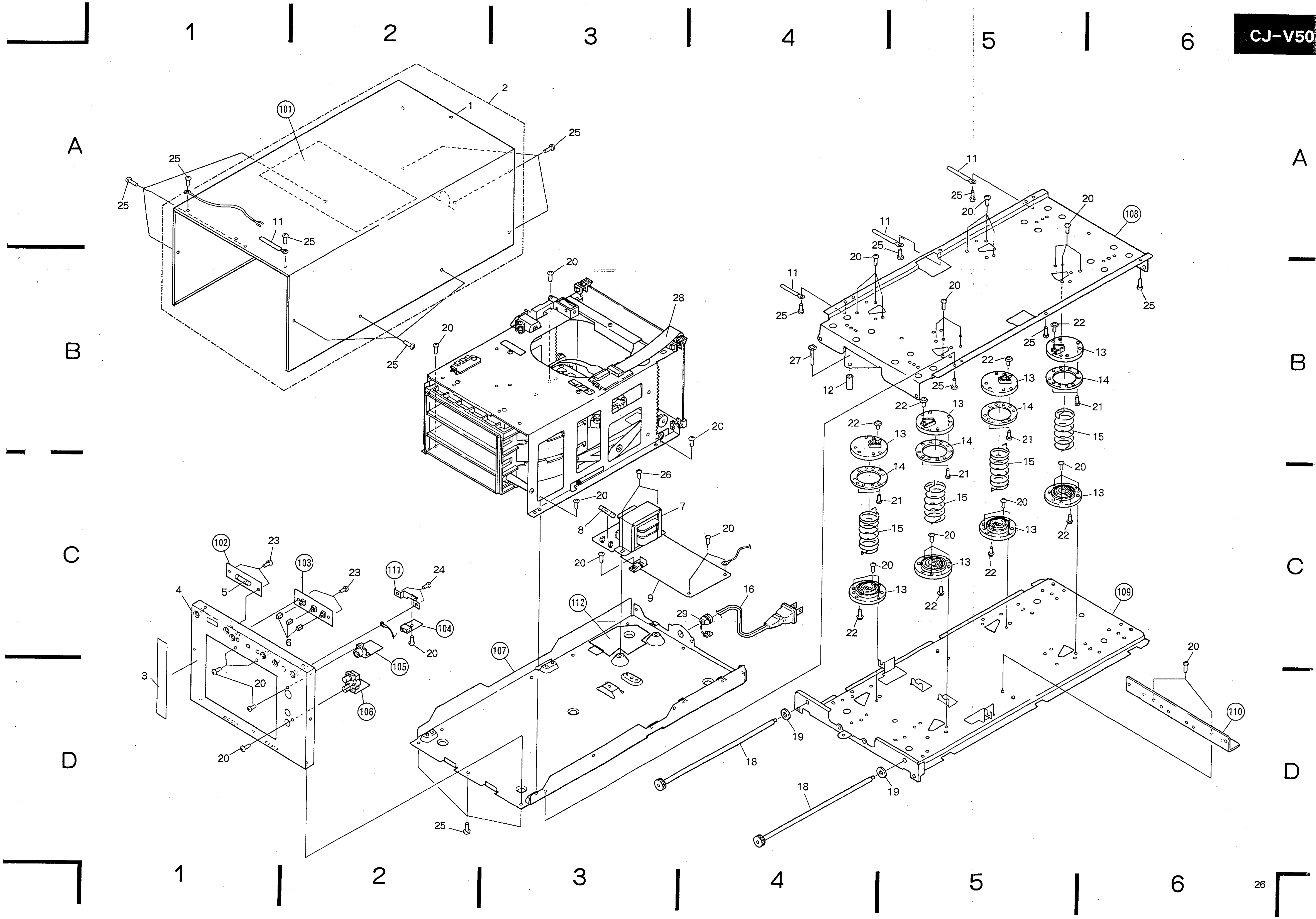
2.2 CD SECTION

2.2.1 EXTERIOR

Parts List

Mark	No.	Part No.	Description
	1	DNE1083	Bonnet
	2	DXX1357	Bonnet assembly
	3	DRW1151	Label A
	4	DNB1012	Front panel
	5	VCX-006	Hour meter
	6	DAC1196	Push button
⚠	7	DTT1047	Power transformer (T201)
⚠	8	REK-094	Fuse (250mA, FU201)
◉	9	DWX1155	ANLG
	10	DEC-176	Plastic rivet
	11	RNH-184	Cord clamper
	12	DLA1336	Coller
	13	DNK1179	SP holder
	14	DNF1075	Plate B
	15	DBH1105	Spring
⚠	16	DDG1038	AC power cord
	17		• • • • •
	18	DLA1337	Lock shaft
	19	DEB1123	Rubber washer
	20	BBZ30P080FMC	Screw
	21	PMZ30P040FMC	Screw
	22	IPZ30P060FMC	Screw
	23	AMZ30P060FMC	Screw
	24	PMZ30P060FMC	Screw
	25	PDZ30P050FMC	Screw
	26	BBZ40P080FMC	Screw
	27	AMZ40P250FMC	Screw
	28	DDD1027	17P flexible cord
	29	CM-22B	Strain relief

Mark	No.	Part No.	Description
	101		Insulation plate B
	102		HRMB
	103		EKEY
	104		RMJB
	105		DJAK
	106		PJAK
	107		Chassis
	108		Upper base
	109		Under base
	110		Sipping angle
	111		Jack holder
	112		Insulation sheet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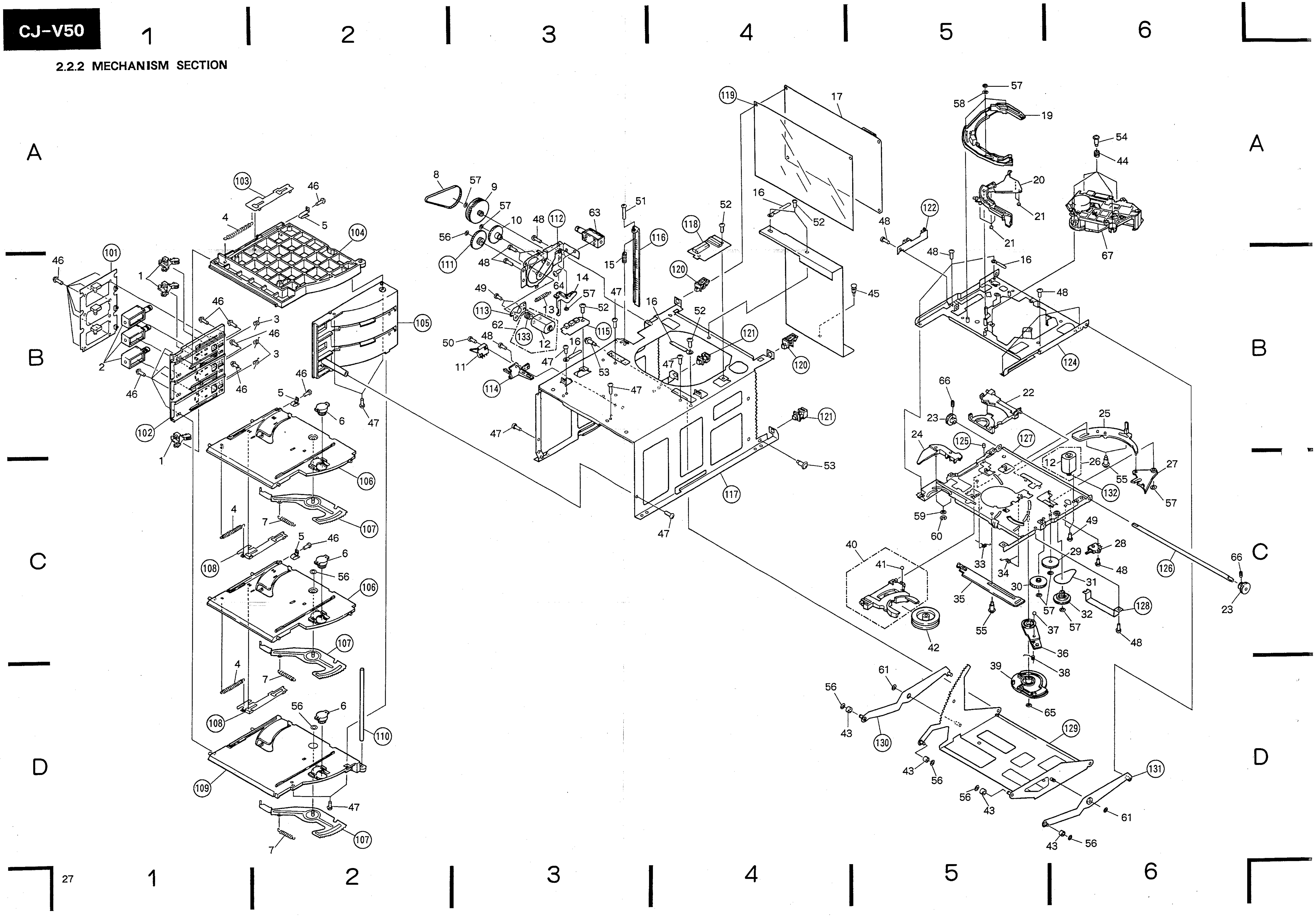
2.2.2 MECHANISM SECTION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Parts List

Mark	No.	Part No.	Description
	1	DNK1566	Lock lever
	2	DXP1008	Plunger
	3	DBH1101	Lock spring
	4	PBH1015	SM spring
	5	DBK1028	Spring
	6	REC1005	Damper assembly
	7	PBH-465	Eject spring
	8	DMS1011	Timing belt
	9	DNK1578	Timing pulley
	10	DNK1575	Gear E2
	11	DSH1011	Slide switch
	12	PXM1002	Motor (SELECT, LOADING)
	13	DBH1100	Select spring
	14	DNK1579	Select lever
	15	DBH1102	Sensor spring
	16	RNH-184	Cord clamper
	17	DWX1116	DEGT
	18	DEC1237	Sheet
	19	PNW1110	Cam
	20	PNW1111	Upper tray
	21	PED1001	Cushion A
	22	DNK1581	Clamper holder B
	23	DNS1080	Synchro gear
	24	DNK1577	Turn drive lever
	25	DNK1574	Clamper cam
	26	PYY1025	Motor assembly
	27	DNK1573	Clamper lever
	28	DSK1001	Lever switch(S1001,CLAMP)
	29	DNK1569	Gear A
	30	DNK1570	Gear B
	31	DEB1104	Belt
	32	PNW1095	Gear pulley
	33	PBH1016	Clamper spring T
	34	DBH1120	Clamper spring B
	35	DNK1572	Drive plate
	36	DNK1571	Drive lever
	37	PBP-001	Steel ball $\phi 4$
	38	DBH1103	Tension spring
	39	DNK1568	Main gear
	40	PNW1107	Clamper holder T
	41	PBP-009	Steel ball $\phi 3$
	42	PNW1857	Clamper
	43	DLA1286	Roller
	44	PEB1014	Floating rubber
	45	DEC-176	Plastic rivet
	46	BPZ20P080FZK	Screw
	47	BPZ30P100FMC	Screw
	48	BSZ26P040FMC	Screw
	49	PMZ20P030FMC	Screw
	50	PMZ20P080FMC	Screw
	51	BMZ26P120FMC	Screw
	52	PCZ30P050FZK	Screw
	53	DBA1023	Link screw
	54	PBA1002	Floating screw
	55	PBA-125	Screw
	56	WT26D047D050	Washer
	57	WT26D047D025	Washer
	58	WA31D054D050	Washer
	59	WA31D054D025	Washer
	60	YE25FUC	E ring
	61	WT31D054D050	Washer
	62	DXX1358	Select motor assembly
	63	DXP1009	Solenoid
	64	BMZ26P030FMC	Screw
	65	WT31D054D025	Washer
	66	ZMD26H040FBT	Screw
	67	DXB1189	Servo mechanism assembly
	101		MJSW
	102		Side guide L
	103		SM select A
	104		Top guide
	105		Side guide R
	106		Center guide
	107		Eject lever
	108		SM select B
	109		Bottom guide
	110		Guide bar
	111		Gear EF
	112		Gear angle
	113		Motor base
	114		Sensor holder
	115		REJC
	116		Sensor plate
	117		Main chassis
	118		FREC
	119		Insulation plate A
	120		Card edge spacer
	121		Corner post
	122		SENS
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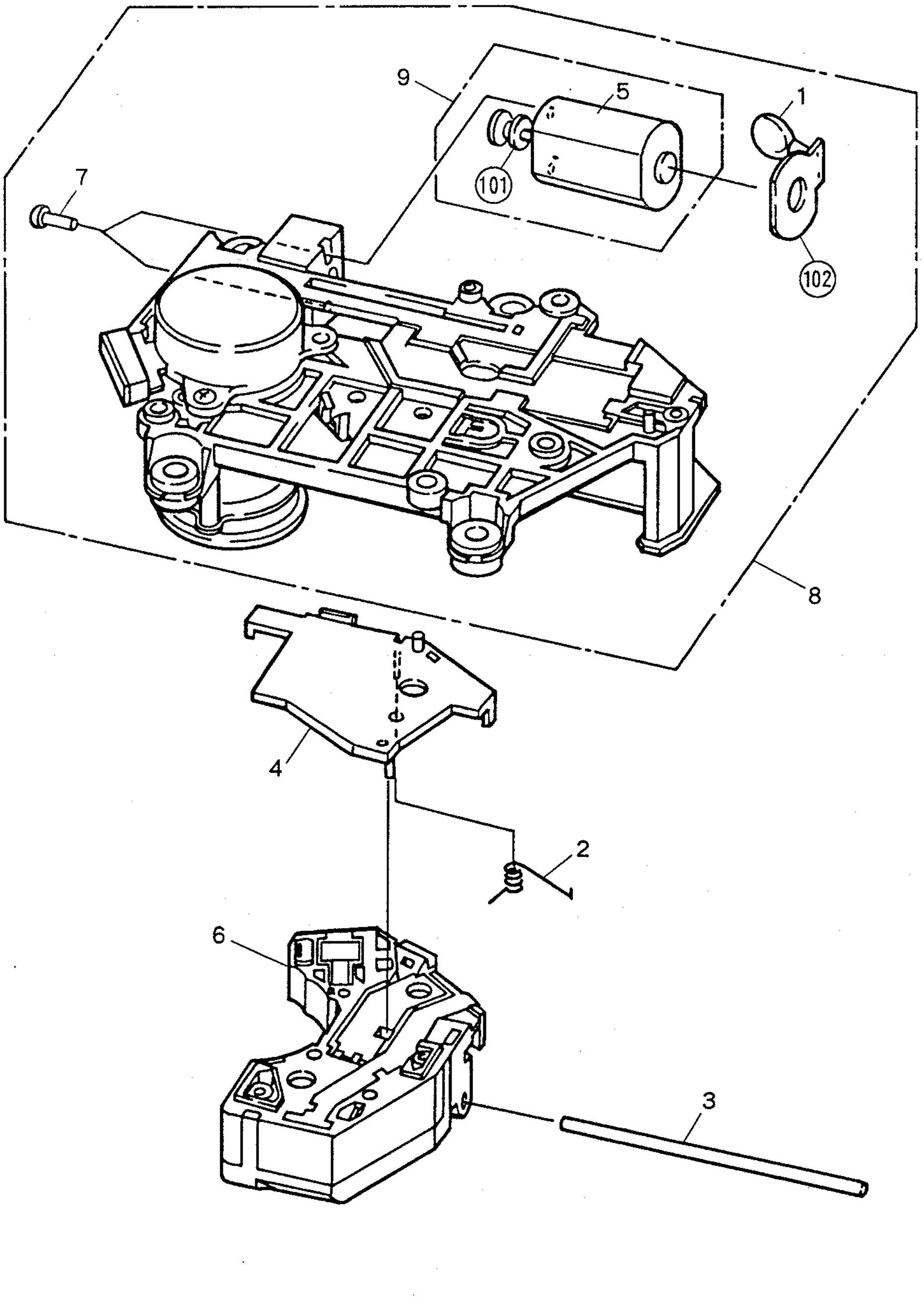
	124		Upper chassis
	125		Rubber tube
	126		Synchro shaft
	127		Sub chassis
	128		Hold plate
	129		Link plate
	130		Link L
	131		Link R
	132		Motor pulley
	133		Motor pulley

2.2.3 SERVO MECHANISM SECTION

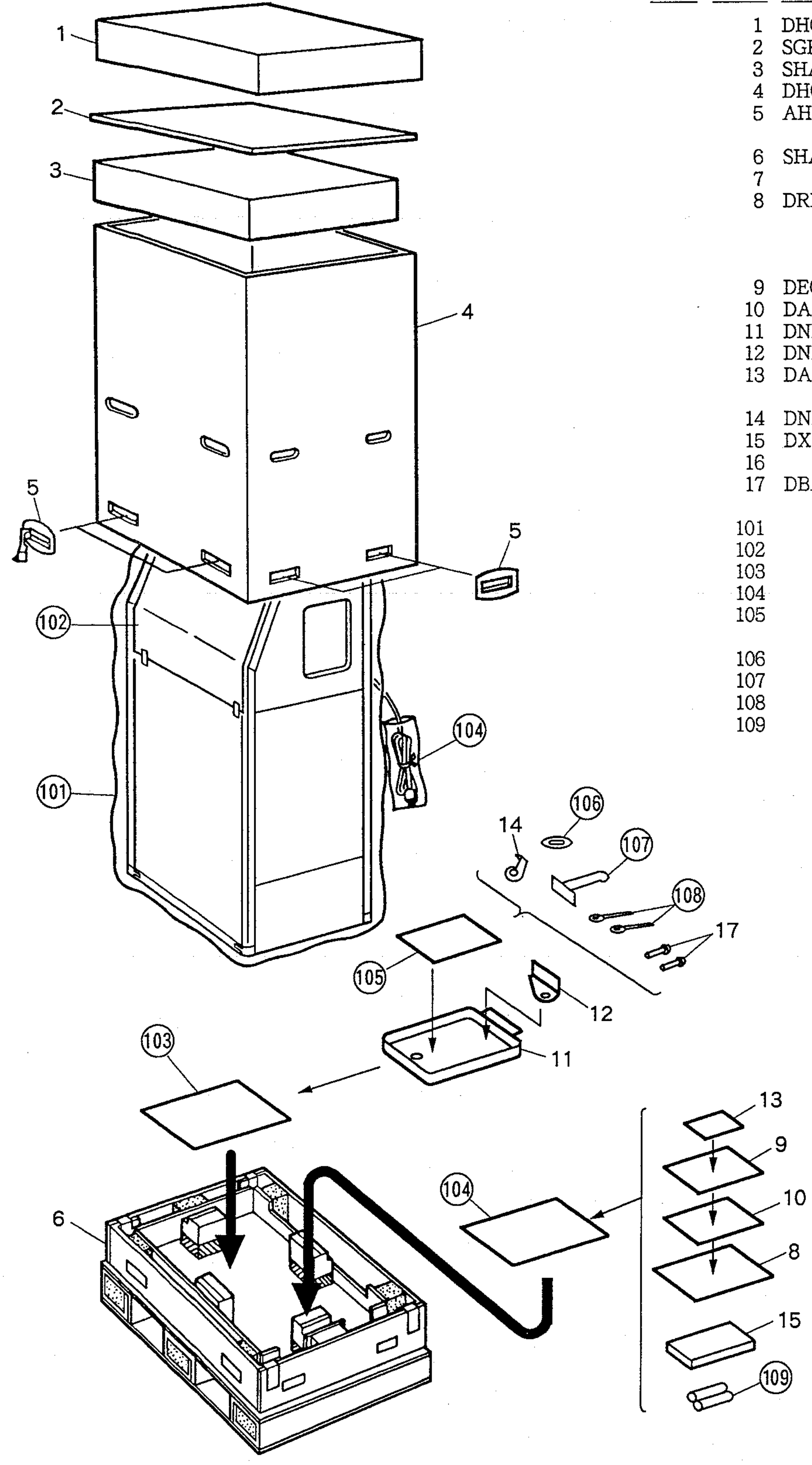
Parts List

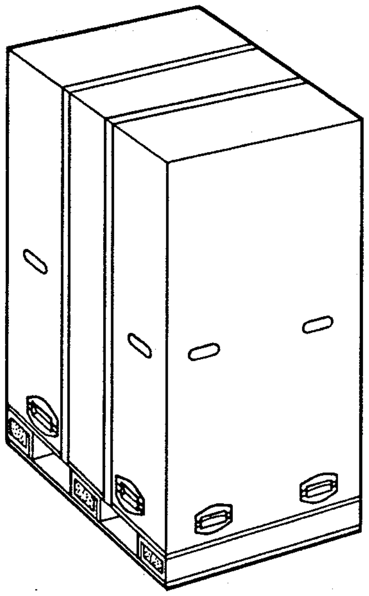
Mark	No.	Part No.	Description
	1	CGDYX104M25	Semiconductive ceramic capacitor
	2	PBH1008	Drive spring
	3	PLA1004	Guide bar
	4	PNW1063	Carriage plate
	5	PXM1002	Motor
	6	PWY1009	Pickup assembly
	7	PMZ20P030FMC	Screw
	8	DXX1361	Spindle motor assembly
	9	PYY1025	Motor assembly
	101		Motor pulley
	102		Carriage M board



3. PACKING

3.1 MAIN SECTION





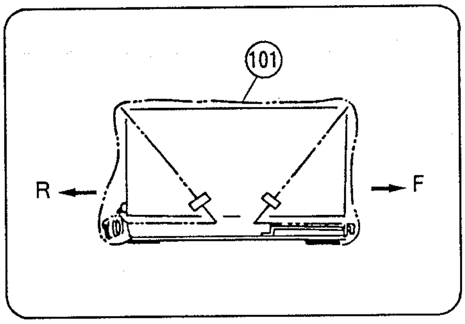
Parts List

Mark	No.	Part No.	Description
	1	DHG1200	Packing cap
	2	SGK1366	Reinforced plate
	3	SHA1380	Pad assembly B
	4	DHG1252	Packing case
	5	AHG-204	PP joint
	6	SHA1413	Pad assembly A
	7		• • • • •
	8	DRB1044	Operating instructions (English/French/German /Italian/Spanish)
	9	DEC1236	Menu number label
	10	DAH1442	Rate seal A
	11	DNH1335	Cover of the money storage
	12	DNF1256	Reinforced plate
	13	DAH1229	Coin sheet
	14	DNH1126	Lock release plate
	15	DXR1009	Remote control unit
	16		• • • • •
	17	DBA1007	Screw
	101		Packing bag
	102		Packing sheet
	103		Vinyl bag
	104		Vinyl bag
	105		Vinyl bag
	106		Blind plate
	107		Cord clamper
	108		Cord clamper
	109		Battery UM-4

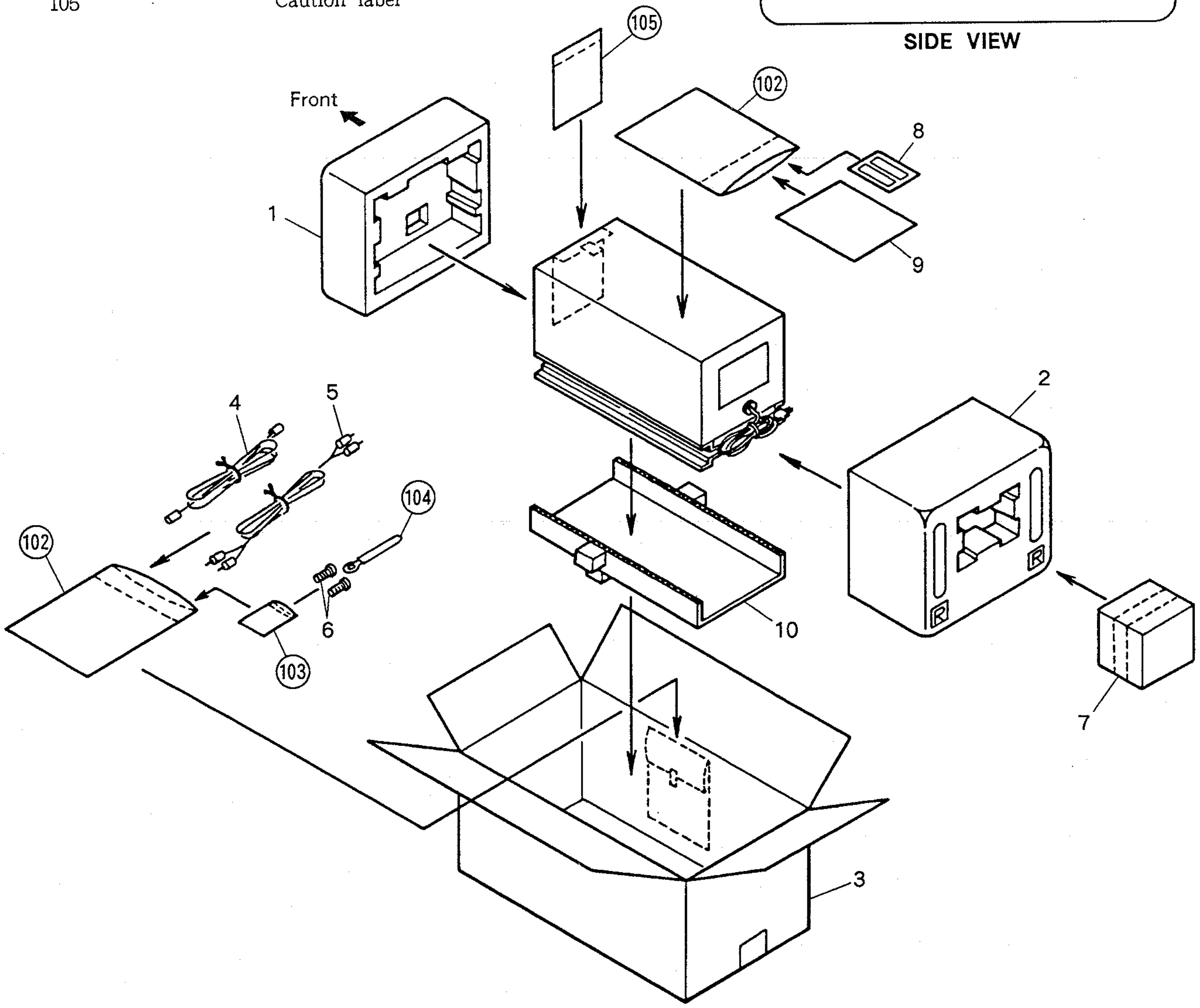
3.2 PACKING OF PD-MV55

Parts List

Mark	No.	Part No.	Description
	1	DHA1086	F pad
	2	DHA1087	R pad
	3	DHG1223	Packing case
	4	DDE1034	Connection cord
	5	PDE1065	Connection cord with pin plug
	6	AMZ40P080FMC	Screw
	7	DHG1164	Case
	8	DRW1156	Label B
	9	DRB1042	Operating instructions (English/French/German/Italian/Spanish)
	10	DHC1015	Reinforcement plate
	101		Packing sheet
	102		Vinyl bag
	103		Vinyl bag
	104		Cord clamper
	105		Caution label



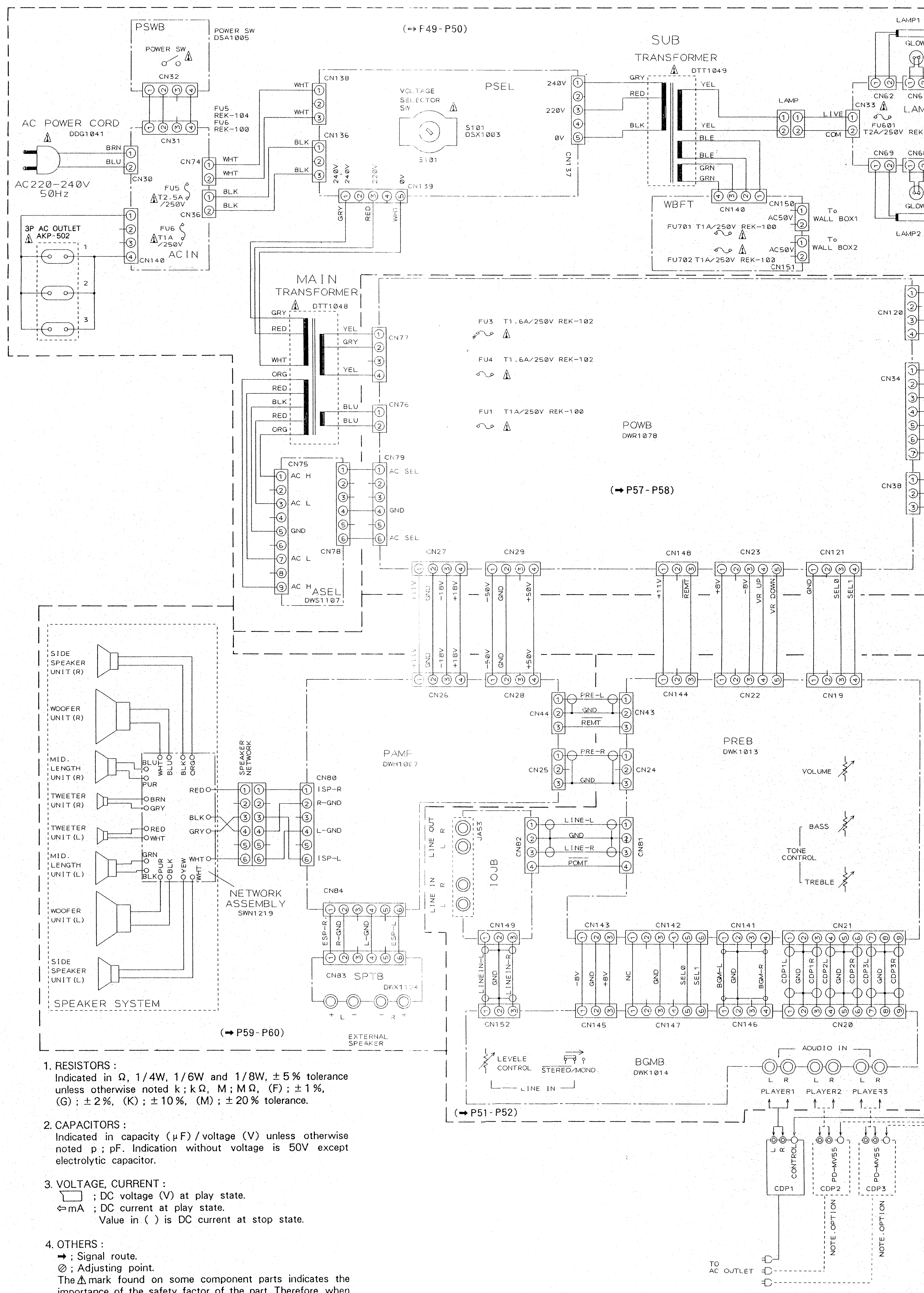
SIDE VIEW



4. SCHEMATIC DIAGRAMS AND P. C. BOARDS PATTERN

4.1 MAIN SECTION

4.1.1 OVERALL CONNECTION DIAGRAM


PSWB
POWER SW DSA1005
POWER SW
CN32
CN31
FU5 REK-104
FU6 REK-100
AC POWER CORD
DDG1041
BRN
BLU
CN30
AC220–240V 50Hz
3P AC OUTLET AKP-502
CN74
WHT
BLK
FU5 T2.5A /250V
FU6 T1A /250V
CN36
ACIN
CN140
(→ P49-P50)
CN138
CN136
PSEL
VOLTAGE SELECTOR SW
S101 DSX1003
240V
220V
0V
CN137
CN139
GRY
RED
SUB TRANSFORMER
DTT1049
YEL
BLE
GRN
LAMP
LIVE
COM
CN33
FU601 T2A/250V REK
CN62
CN69
LAMP1
LAMP2
GLOW
WBFT
CN140
CN150
CN151
AC50V
FU701 T1A/250V REK-100
FU702 T1A/250V REK-100
To WALL BOX1
To WALL BOX2
MAIN TRANSFORMER
DTT1048
ORG
CN77
CN76
CN75
AC H
AC L
GND
CN78
CN79
AC SEL
ASEL
DWS1107
FU3 T1.6A/250V REK-102
FU4 T1.6A/250V REK-102
FU1 T1A/250V REK-100
POWB
DWR1078
(→ P57-P58)
CN120
CN34
CN38
CN27
CN29
CN148
CN23
CN121
+11V
-18V
+18V
-50V
+50V
REMT
+8V
-8V
VR UP
VR DOWN
SEL0
SEL1
CN26
CN28
CN144
CN22
CN19
CN44
CN43
PRE-L
PRE-R
CN25
CN24
PREB
DWK1013
VOLUME
BASS
TONE CONTROL
TREBLE
PAMP
DWH1007
SIDE SPEAKER UNIT (R)
WOOFER UNIT (R)
MID. LENGTH UNIT (R)
TWEETER UNIT (R)
TWEETER UNIT (L)
MID. LENGTH UNIT (L)
WOOFER UNIT (L)
SIDE SPEAKER UNIT (L)
SPEAKER SYSTEM
SPEAKER NETWORK
PUR
YEW
NETWORK ASSEMBLY
SWN1219
CN80
ISP-R
R-GND
L-GND
ISP-L
CN84
ESP-R
ESP-L
CN83
SPTB
DWX1124
EXTERNAL SPEAKER
(→ P59-P60)
LINE OUT
LINE IN
JA53
CN82
CN81
IOJB
LINE-L
LINE-R
POMT
CN149
CN143
CN142
CN141
CN21
LINEIN-L
LINEIN-R
NC
BGM-L
BGM-R
CDP1L
CDP1R
CDP2L
CDP2R
CDP3L
CDP3R
CN152
CN145
CN147
CN146
CN20
LEVELE CONTROL
STEREO/MONO
LINE IN
BGMB
DWK1014
AUDIO IN
PLAYER1
PLAYER2
PLAYER3
(→ P51-P52)
CONTROL
CDP1
PD-M55
CDP2
CDP3
NOTE. OPTION
TO AC OUTLET

1. RESISTORS :
   Indicated in Ω, 1/4W, 1/6W and 1/8W, ±5% tolerance unless otherwise noted k; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance.

2. CAPACITORS :
   Indicated in capacity (μF) / voltage (V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT :
   ▭ ; DC voltage (V) at play state.
   ⇦mA ; DC current at play state.
   Value in ( ) is DC current at stop state.

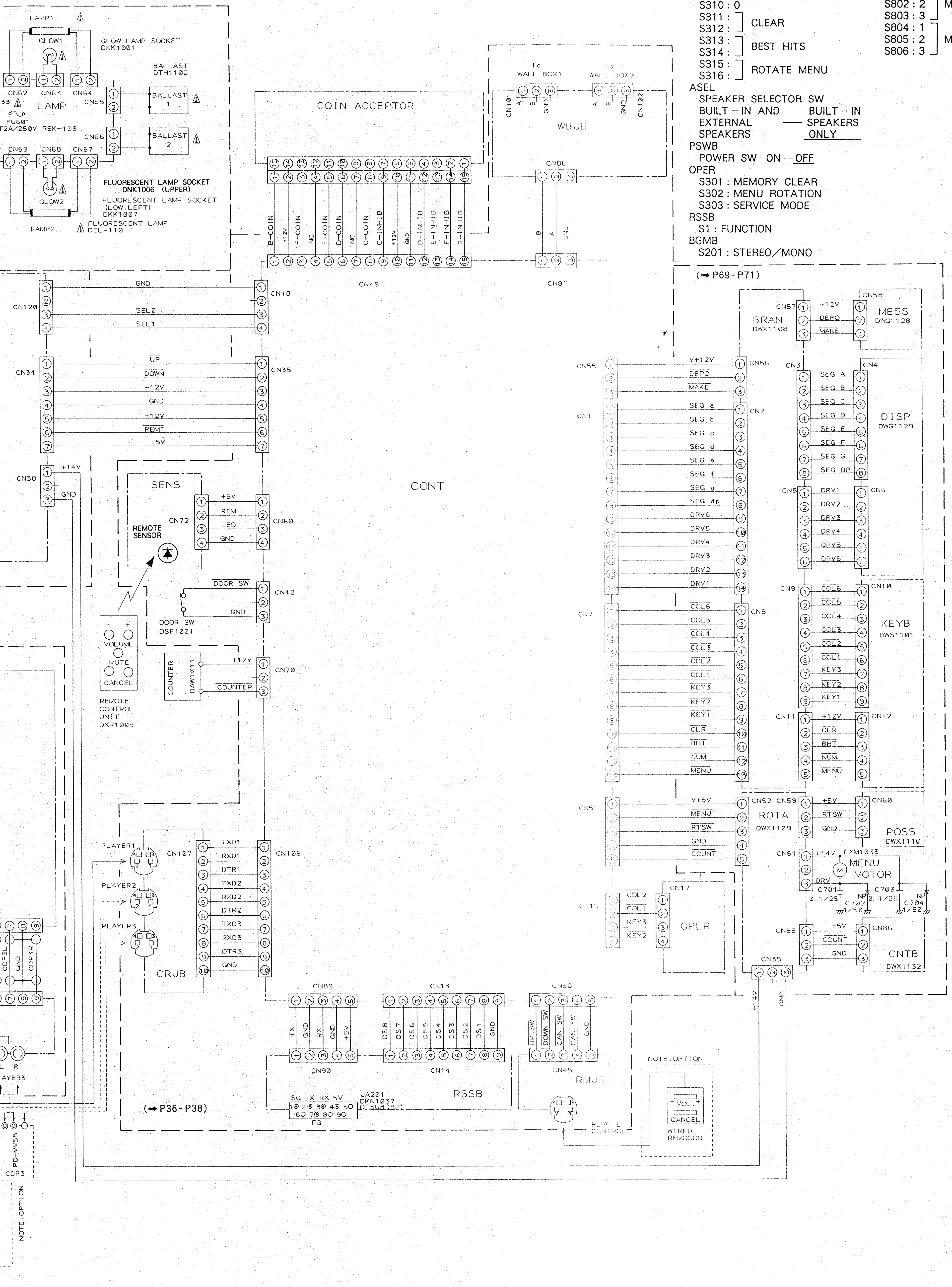
4. OTHERS :
   → ; Signal route.
   ⊘ ; Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※ marked capacitors and resistors have parts numbers.

   This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

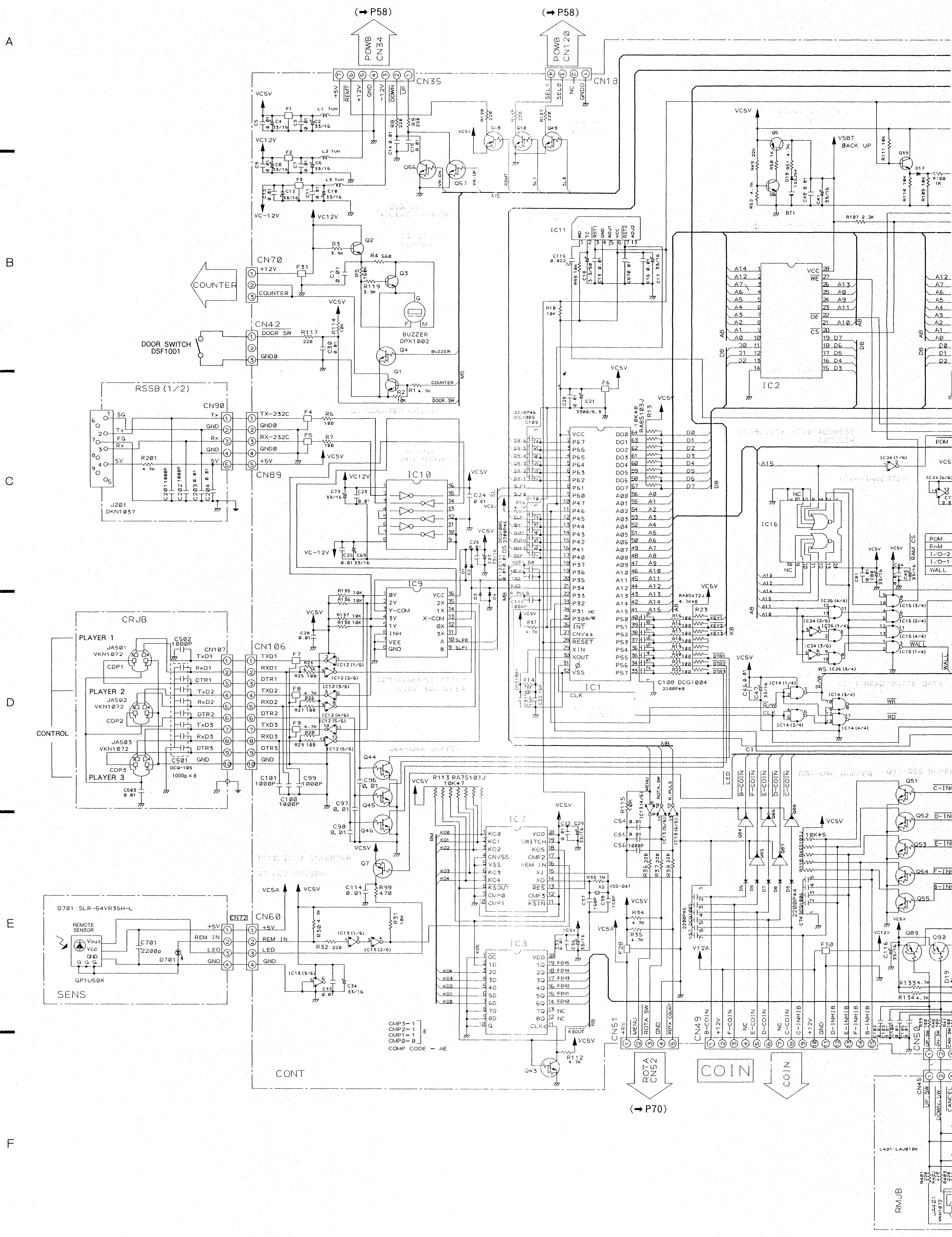
5. SWITCHES : (The underlined indicates the switch position)

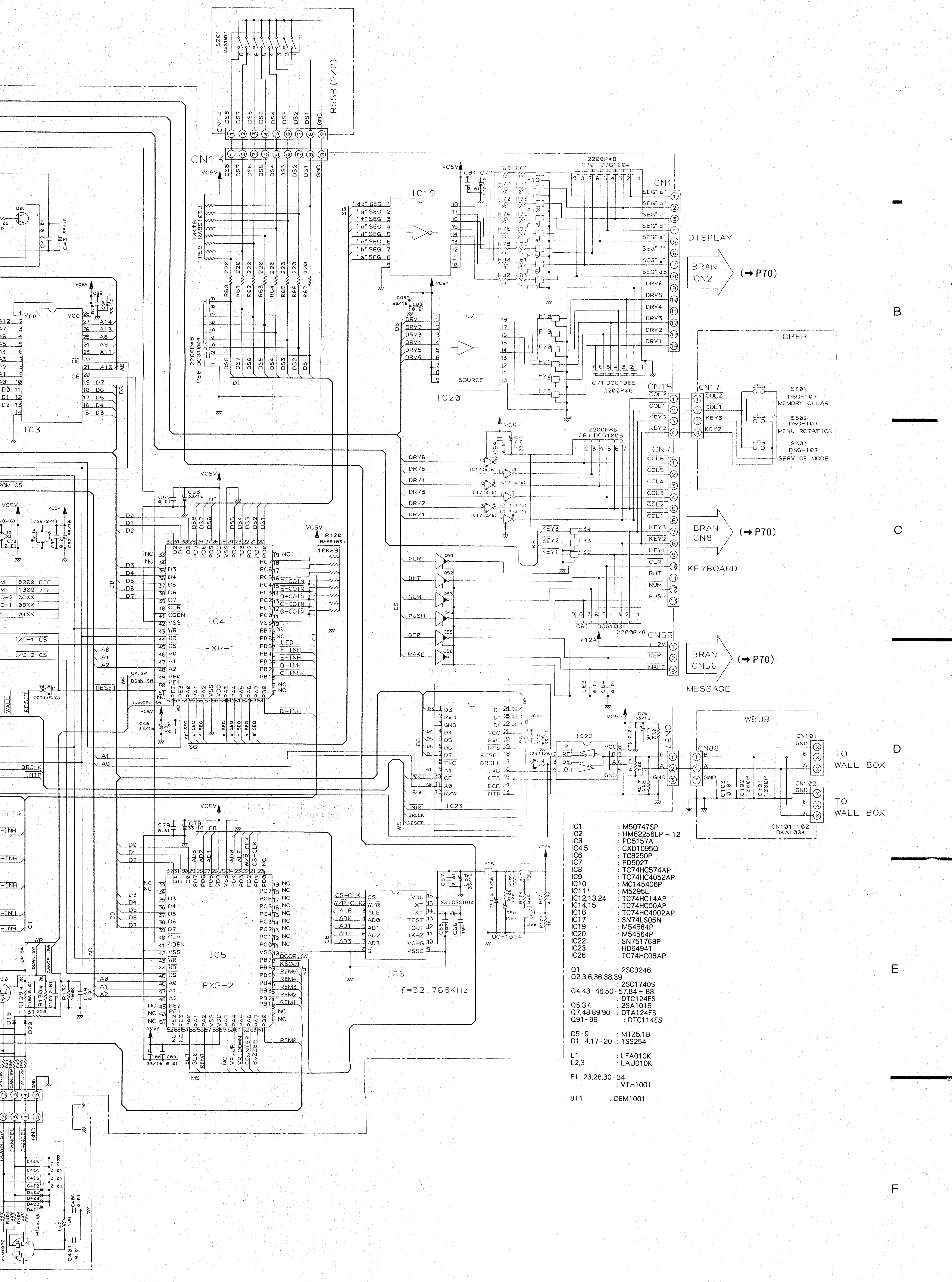
MAIN SECTION
OUTSIDE OF P.C.BOARDS
DOOR SW
KEYB
S301 : 1
S302 : 2
S303 : 3
S304 : 4
S305 : 5
S306 : 6
S307 : 7
S308 : 8
S309 : 9
S310 : 0
S311 : ⎤
S312 : ⎦ CLEAR
S313 : ⎤
S314 : ⎦ BEST HITS
S315 : ⎤
S316 : ⎦ ROTATE MENU
ASEL
SPEAKER SELECTOR SW
BUILT－IN AND — BUILT－IN
EXTERNAL — SPEAKERS
SPEAKERS — ONLY
PSWB
POWER SW ON — OFF
OPER
S301 : MEMORY CLEAR
S302 : MENU ROTATION
S303 : SERVICE MODE
RSSB
S1 : FUNCTION
BGMB
S201 : STEREO／MONO

CD SECTION
OUT SIDE OF P.C.BOARDS
DOWN LIMIT TRAY SW
CLAMP SW
IN SIDE SW
EKEY
S301 : A ⎤
S302 : B ⎥ EJECT
S303 : C ⎦
SENS
S901 : UP LIMIT
MJSW
S801 : 1 ⎤
S802 : 2 ⎥ MJ LOCK
S803 : 3 ⎦
S804 : 1 ⎤
S805 : 2 ⎥ MJ SENS
S806 : 3 ⎦

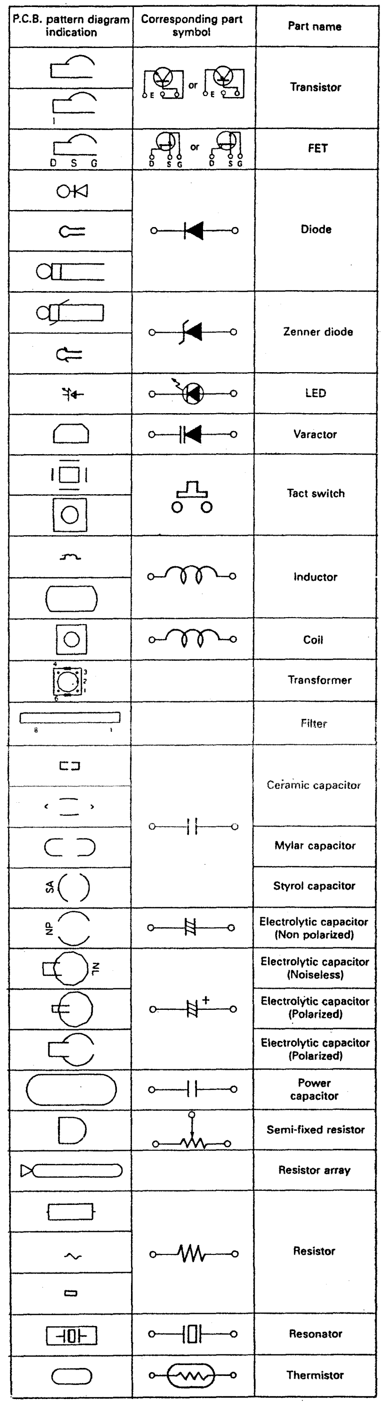

LAMP1
GLOW1
GLOW LAMP SOCKET DKK1001
BALLAST DTH1106
CN62 CN63 CN64 CN65
LAMP
BALLAST 1
BALLAST 2
FU601 T2A/250V REK-103
CN69 CN68 CN67 CN66
FLUORESCENT LAMP SOCKET DNK1006 (UPPER)
FLUORESCENT LAMP SOCKET (LOW,LEFT) DKK1007
GLOW2
LAMP2
FLUORESCENT LAMP DEL-110
COIN ACCEPTOR
To WALL BOX1
To WALL BOX2
CN101 CN102
WBJB
CN88
B-COIN +12V F-COIN NC E-COIN D-COIN NC C-COIN +12V GND D-INHIB E-INHIB F-INHIB B-INHIB
CN49
CN8
(→P69-P71)
CN120 GND SEL0 SEL1 CN18
CN34 UP DOWN -12V GND +12V REMT +5V CN35
CN38 +14V GND
SENS
REMOTE SENSOR
CN72 +5V REM LED GND CN60
DOOR SW GND CN42
DOOR SW DSF1021
VOLUME MUTE CANCEL
REMOTE CONTROL UNIT DXR1009
COUNTER DAW1011 +12V COUNTER CN70
CONT
PLAYER1 PLAYER2 PLAYER3
CN107 TXD1 RXD1 DTR1 TXD2 RXD2 DTR2 TXD3 RXD3 DTR3 GND CN106
CRJB
CDP3L GND CDP3R
L R
PLAYER3
PD-MV55
CDP3
NOTE.OPTION
CN89 TX GND RX GND +5V CN90
CN13 DS8 DS7 DS6 DS5 DS4 DS3 DS2 DS1 GND CN14
CN50 UP.SW DOWN.SW CAN.SW CAN.SW GND CN45
RSSB
RMJB
SG TX RX 5V
1⊕ 2⊕ 3⊕ 4⊕ 50
60 70 80 90
FG
JA201 DKN1037 D-SUB(9P)
(→P36-P38)
REMOTE CONTROL
NOTE.OPTION
VOL
CANCEL
WIRED REMOCON
CN57 +12V DEPO MAKE CN58
BRAN DWX1108
MESS DWG1128
CN55 V+12V DEPO MAKE CN56
CN1 SEG a SEG b SEG c SEG d SEG e SEG f SEG g SEG dp DRV6 DRV5 DRV4 DRV3 DRV2 DRV1 CN2
CN3 SEG A SEG B SEG C SEG D SEG E SEG F SEG G SEG DP CN4
DISP DWG1129
CN5 DRV1 DRV2 DRV3 DRV4 DRV5 DRV6 CN6
CN7 COL6 COL5 COL4 COL3 COL2 COL1 KEY3 KEY2 KEY1 CLR BHT NUM MENU CN8
CN9 CCL6 CCL5 CCL4 CCL3 CCL2 CCL1 KEY3 KEY2 KEY1 CN10
KEYB DWS1101
CN11 +12V CLR BHT NUM MENU CN12
CN51 V+5V MENU RTSW GND COUNT CN52
ROTA DWX1109
CN59 +5V RTSW GND CN60
POSS DWX1110
CN61 +14V DXM1033 MENU MOTOR DRV
C701 0.1/25 C702 1/50 C703 0.1/25 C704 1/50
CN15 COL2 COL1 KEY3 KEY2 CN17
OPER
CN85 +5V COUNT GND CN86
CNTB DWX1132
CN39 +14V GND

4.1.2 RSSB, CRJB, SENS, CONT, RMJB, OPER AND WBJB


(→P58)
POWB CN34
(→P58)
POWB CN120
CN35
CN18
+5V
REMT
+12V
GND
-12V
DOWN
UP
SEL1
SEL0
NC
GND0
VC5V
VC12V
VC-12V
Q56
Q57
Q48
Q50
Q49
CN70
COUNTER
F31
Q2
Q3
BUZZER DPX1002
CN42
DOOR SWITCH DSF1001
DOOR SW
GND0
Q4
Q1
RSSB (1/2)
CN90
J201 DKN1037
CN89
TX-232C
RX-232C
IC10
IC9
IC11
IC1
IC2
IC16
IC7
IC8
CRJB
PLAYER 1
JA501 VKN1072
CDP1
PLAYER 2
JA502 VKN1072
CDP2
CONTROL
JA503 VKN1072
CDP3
PLAYER 3
CN107
CN106
Q44
Q45
Q46
Q7
D701 : SLR-54VR35H-L
REMOTE SENSOR
GP1U50X
SENS
CN72
CN60
REM IN
LED
GND
CONT
CMP3=1
CMP2=1
CMP1=1
CMP0=0
COMP CODE = AE
Q43
CN51
ROTA CN52
(→P70)
CN49
COIN
Q51
Q52
Q53
Q54
Q55
CN50
CN45
RMJB
L401 : LAU01BK
JA401 VKN1072
ROM
RAM
I/O-2
I/O-1
WALL
V5BT BACK UP
BT1
Q5
Q6
Q39
Q89
Q90

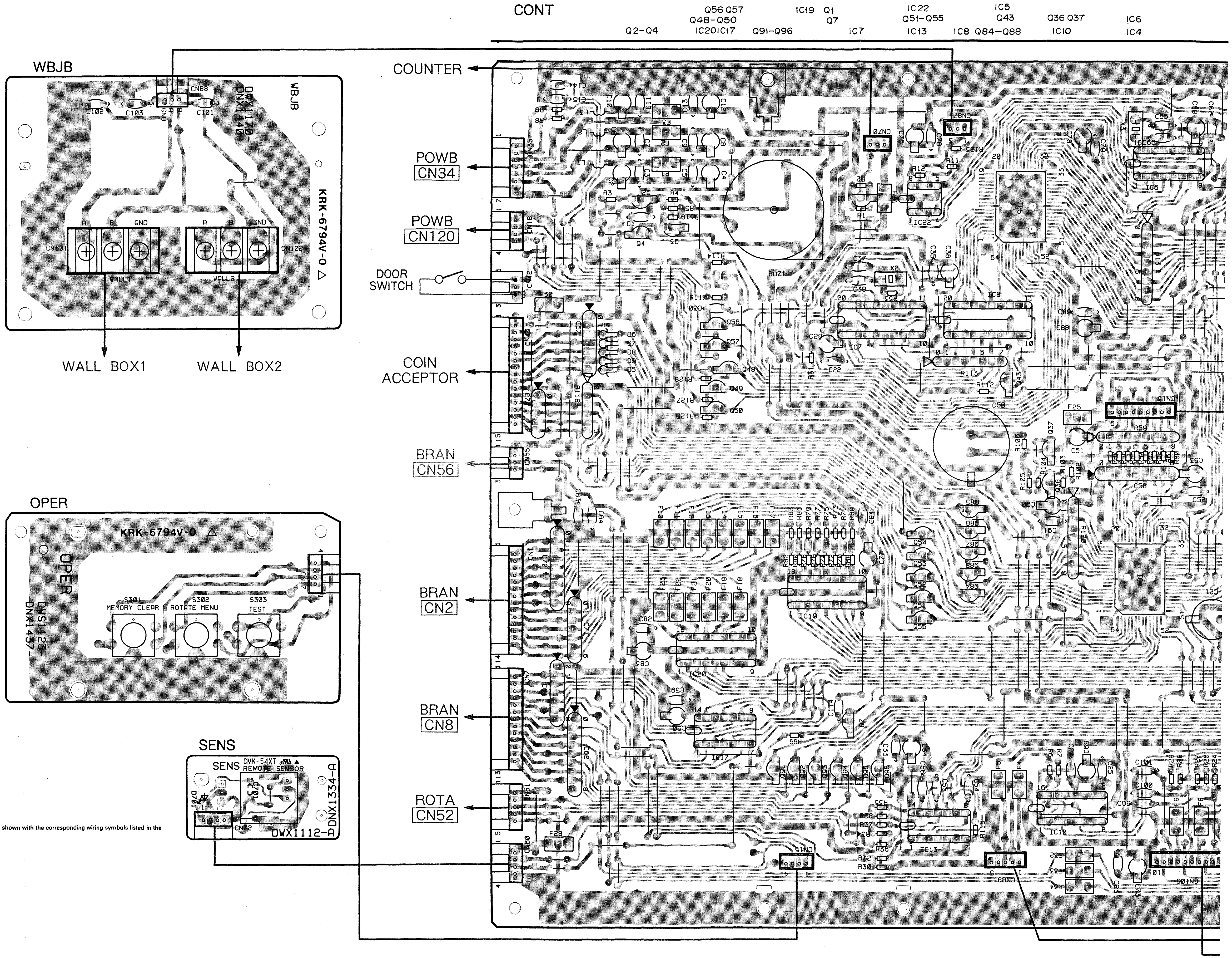

S201
DSX1011
RSSB (2/2)
CN14
CN13
DS8
DS7
DS6
DS5
DS4
DS3
DS2
DS1
GND
VC5V
10K*8
RABS103J
R59
R60
R61
R62
R63
R64
R65
R66
R67
220
2200P*8
DCG1004
C58
IC19
IC20
SOURCE
SG
"dp" SEG
"a" SEG
"f" SEG
"g" SEG
"d" SEG
"c" SEG
"h" SEG
"e" SEG
DRV1
DRV2
DRV3
DRV4
DRV5
DRV6
C70 DCG1004
2200P*8
C71 DCG1005
2200P*6
CN1
DISPLAY
BRAN
CN2
(→P70)
OPER
CN15
CN'7
COL2
COL1
KEY3
KEY2
S301
DSG-107
MEMORY CLEAR
S302
DSG-107
MENU ROTATION
S303
DSG-107
SERVICE MODE
C61 DCG1005
2200P*6
CN7
COL6
COL5
COL4
COL3
KEY1
CLR
BHT
NUM
PUSH
BRAN
CN8
(→P70)
KEYBOARD
KB
C62 DCG1004
2200P*8
CN55
+12V
DEP
MAKE
V12A
BRAN
CN56
(→P70)
MESSAGE
Q91
Q92
Q93
Q94
Q95
Q96
IC17
IC4
EXP-1
IC3
IC24
R120
RABS103J
10K*8
F-COIN
E-COIN
D-COIN
C-COIN
B-COIN
LED
F-INH
E-INH
D-INH
C-INH
B-INH
RESET
UP.SW
DOWN.SW
CANCEL.SW
WALL
D0
D1
D2
D3
D4
D5
D6
D7
A0
A1
A2
CLR
ODEN
VSS
WR
RD
CS
PE0
PE1
I/O-1 CS
I/O-2 CS
BRCLK
INTR
IC23
IC22
RE
DE
CN87
CN88
WBJB
CN101
CN102
TO WALL BOX
TO WALL BOX
CN101, 102
DKA1004
C103
C102
C101
1000P
R123
100
R117
4.7K
IC5
EXP-2
CS-CLK
W/R-CLK
ALE
AD0
AD1
AD2
AD3
DOOR.SW
KSOUT
REM5
REM4
REM3
REM2
REM1
REM0
SL1
SL0
REMT
VR.UP
VR.DOWN
COUNTER
BUZZER
MS
CB
CLOCK
IC6
X3 : DSS1014
f=32.768KHz
VDD
XT
-XT
TEST
TOUT
4KHZ
VCHG
VSSC
Q37
Q36
DC-1004
IC4, IC5 PORT ADDRESS (EXTENSION)
8000-FFFF
1000-7FFF
0CXX
08XX
04XX
ROM CS
VKN1072
L401
C401
C406

IC1	: M50747SP
IC2	: HM62256LP - 12
IC3	: PD5157A
IC4,5	: CXD1095Q
IC6	: TC8250P
IC7	: PD5027
IC8	: TC74HC574AP
IC9	: TC74HC4052AP
IC10	: MC145406P
IC11	: M5295L
IC12,13,24	: TC74HC14AP
IC14,15	: TC74HC00AP
IC16	: TC74HC4002AP
IC17	: SN74LS05N
IC19	: M54584P
IC20	: M54564P
IC22	: SN75176BP
IC23	: HD64941
IC26	: TC74HC08AP
Q1	: 2SC3246
Q2,3,6,36,38,39	: 2SC1740S
Q4,43-46,50-57,84-88	: DTC124ES
Q5,37,	: 2SA1015
Q7,48,89,90	: DTA124ES
Q91-96	: DTC114ES
D5-9	: MTZ5.1B
D1-4,17-20	: 1SS254
L1	: LFA010K
L2,3	: LAU010K
F1-23,28,30-34	: VTH1001
BT1	: DEM1001

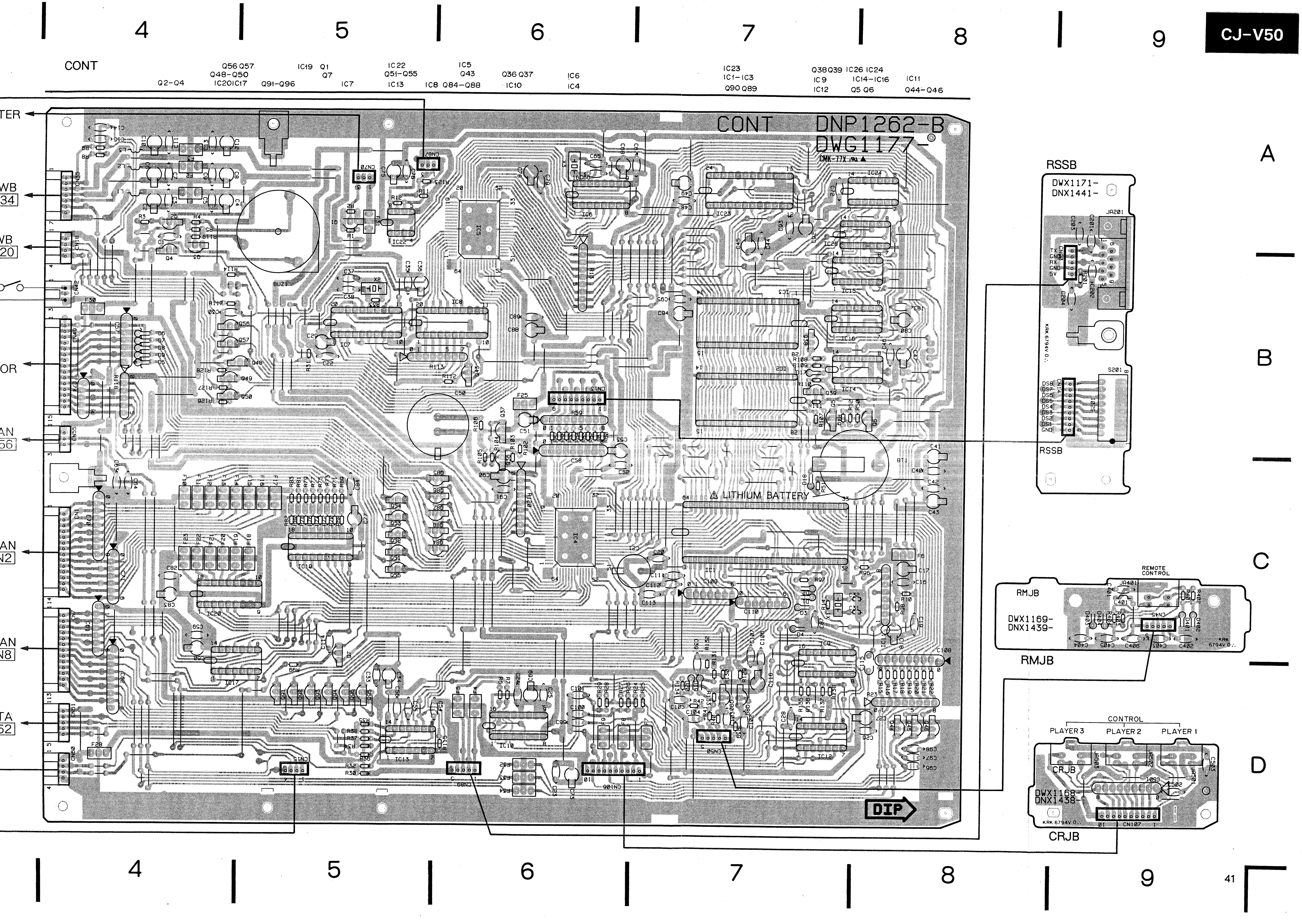


P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

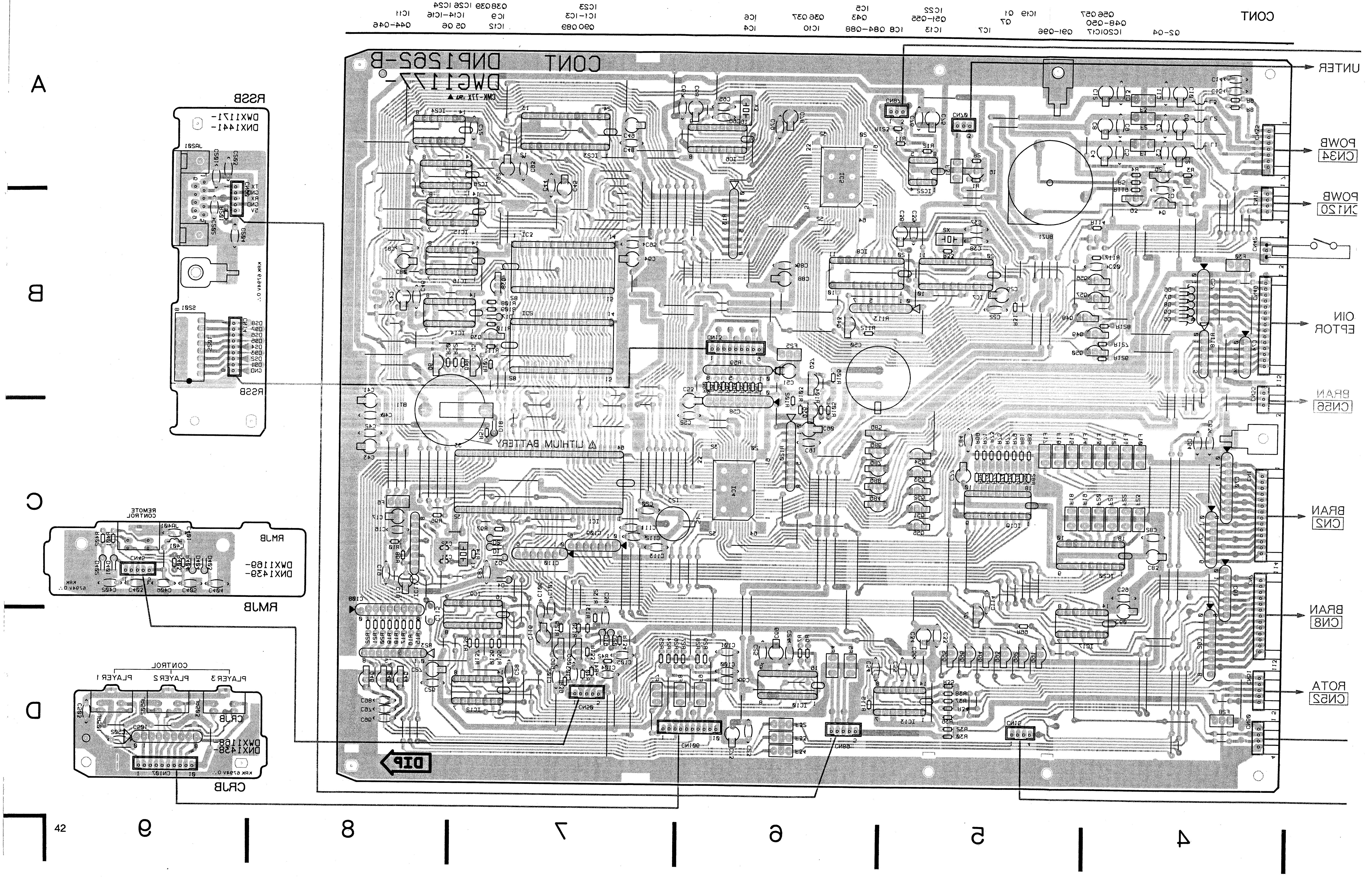
1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with O shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

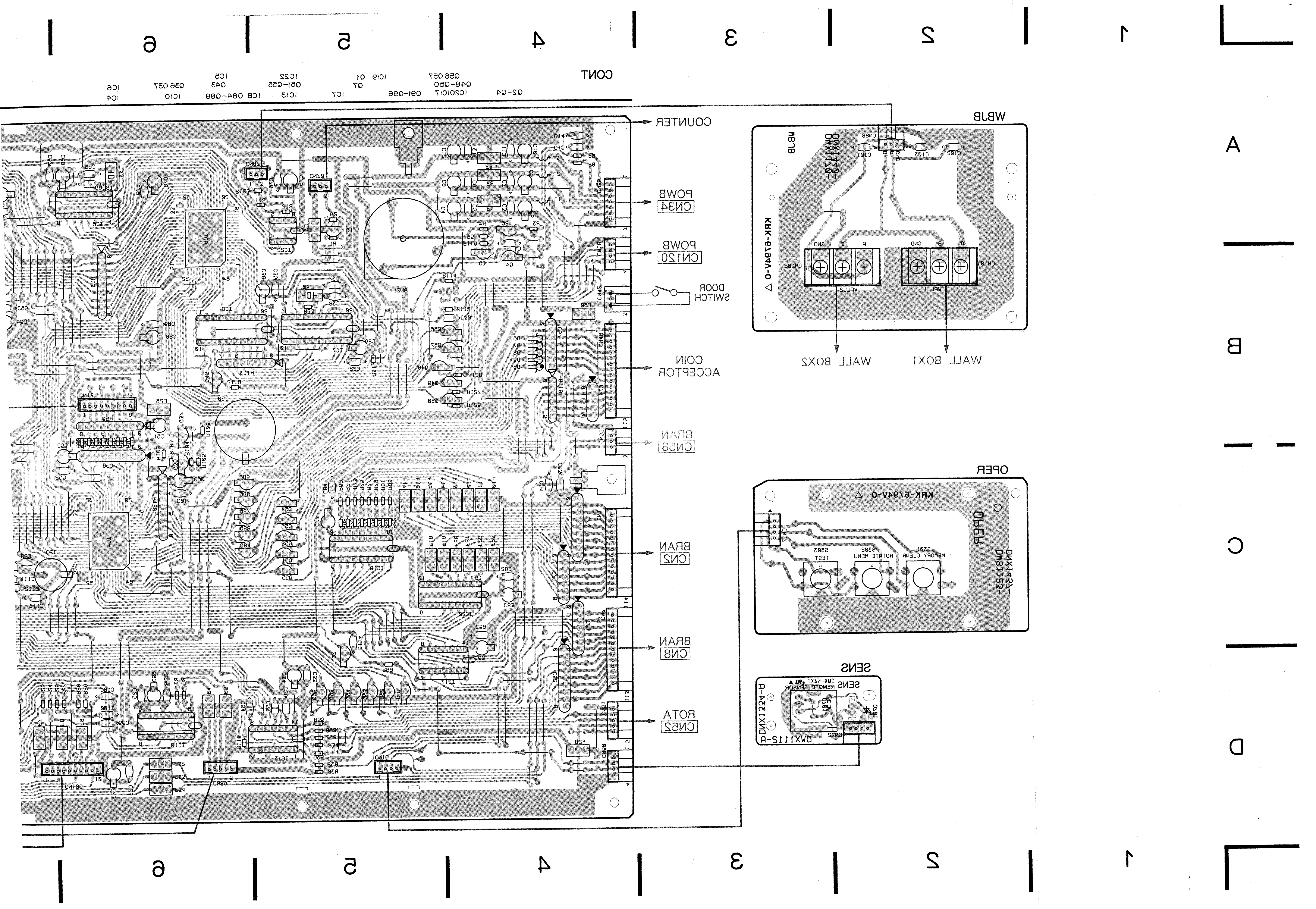

WBJB
CN88
C102
C103
C101
DWX1170-
DNX1440-
KRK-6794V-0 △
A
B
GND
CN101
CN102
WALL1
WALL2
WALL BOX1
WALL BOX2
OPER
KRK-6794V-0 △
DWS1123-
DNX1437-
CN17
S301 MEMORY CLEAR
S302 ROTATE MENU
S303 TEST
SENS
CMK-54XT REMOTE SENSOR
D701
CN72
DNX1334-A
DWX1112-A
CONT
Q2–Q4
Q56 Q57
Q48–Q50
IC20 IC17
Q91–Q96
IC19 Q1
Q7
IC7
IC22
Q51–Q55
IC13
IC8
IC5
Q43
Q84–Q88
Q36 Q37
IC10
IC6
IC4
COUNTER
POWB
CN34
POWB
CN120
DOOR SWITCH
COIN ACCEPTOR
BRAN
CN56
BRAN
CN2
BRAN
CN8
ROTA
CN52
CN70
CN87
CN15
CN89
CN13
CN106
BUZ1
X1
X2

1
2
3
4
5
6
A
B
C
D


4
5
6
7
8
9
CONT
Q2–Q4
Q56 Q57
Q48–Q50
IC20 IC17
IC19 Q1
Q7
Q91–Q96
IC7
IC22
Q51–Q55
IC13
IC8 Q84–Q88
IC5
Q43
Q36 Q37
IC10
IC6
IC4
IC23
IC1–IC3
Q90 Q89
Q38 Q39
IC9
IC12
IC26 IC24
IC14–IC16
Q5 Q6
IC11
Q44–Q46
CONT DNP1262-B
DWG1177-
LITHIUM BATTERY
DIP
A
B
C
D
RSSB
DWX1171-
DNX1441-
TX
GND
RX
GND
5V
RMJB
DWX1169-
DNX1439-
REMOTE CONTROL
CRJB
CONTROL
PLAYER 3
PLAYER 2
PLAYER 1
DWX1168-
DNX1438-
CN107

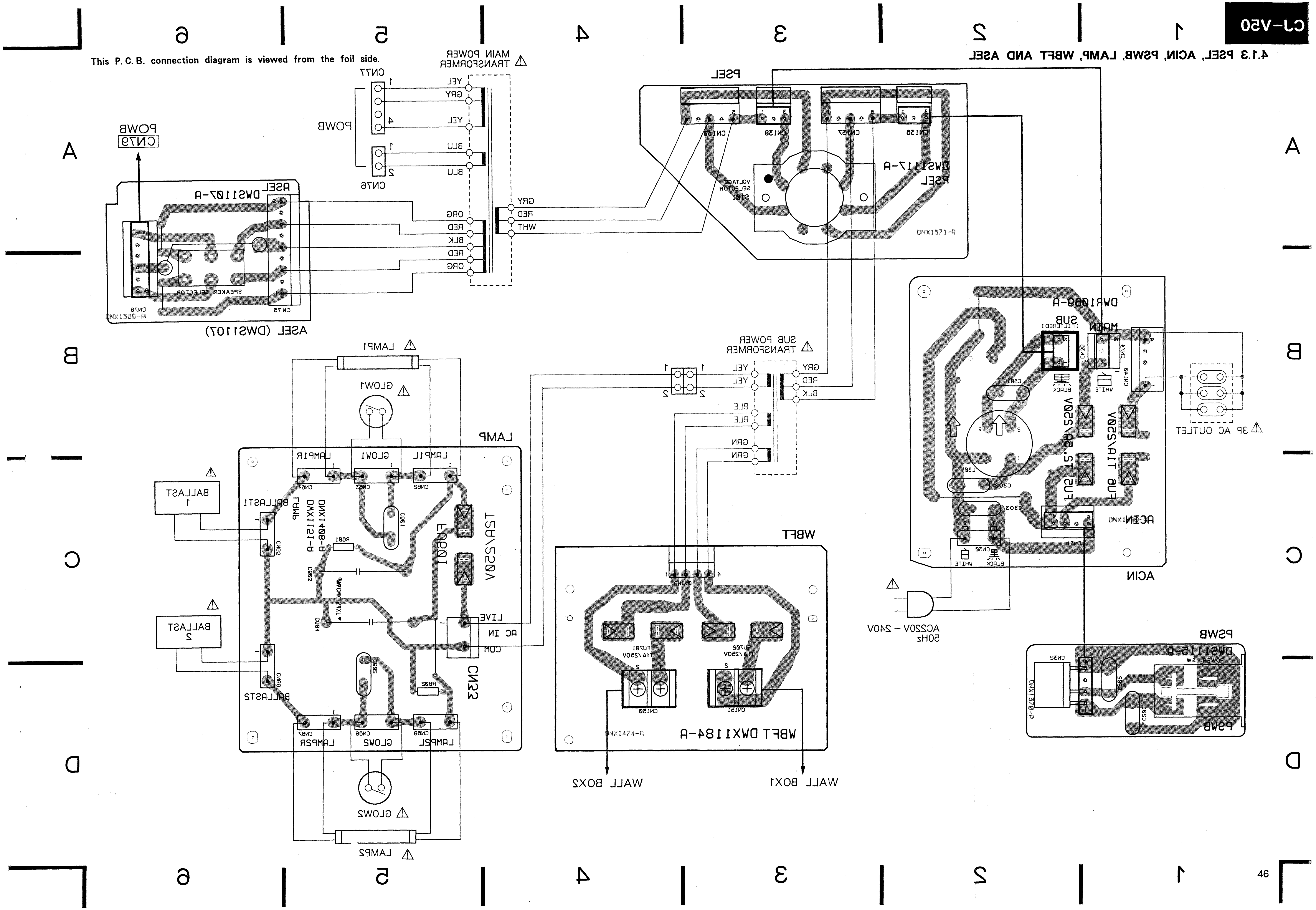
This P. C. B. connection diagram is viewed from the foil side.


9
8
7
6
5
4
A
B
C
D
CONT
IC11 Q44–Q46
Q38 Q39 IC26 IC24 IC14–IC16 Q5 Q6
IC9 IC12
IC23 IC1–IC3 Q90 Q89
IC6 IC4
Q36 Q37 IC10
IC5 Q43 IC8 Q84–Q88
IC22 Q51–Q55 IC13
IC7
IC19 Q1 Q7 Q91–Q96
Q56 Q57 Q48–Q50 IC20 IC17
Q2–Q4
DNP1262-B
DWG1177-
CONT
LITHIUM BATTERY
DIP
RSSB
DWX1171-
DNX1441-
RMJB
DWX1169-
DNX1439-
REMOTE CONTROL
CRJB
DWX1168-
DNX1438-
CONTROL
PLAYER 1
PLAYER 2
PLAYER 3
UNTER
POWB CN34
POWB CN120
OIN EPTOR
BRAN CN56
BRAN CN2
BRAN CN8
ROTA CN52

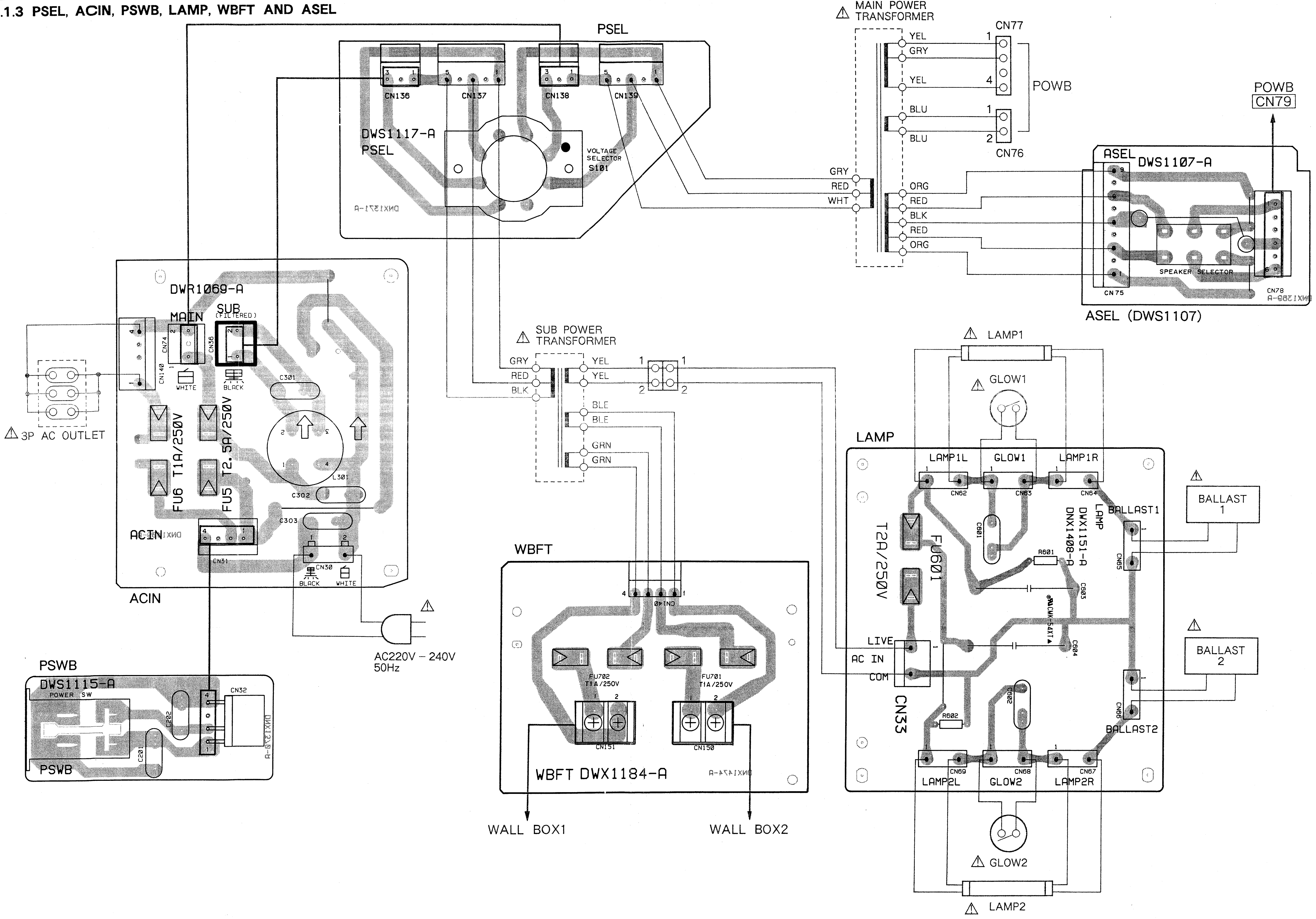

CONT
WBJB
OPER
SENS
COUNTER
POWB CN34
POWB CN120
DOOR SWITCH
COIN ACCEPTOR
BRAN CN56
BRAN CN2
BRAN CN8
ROTA CN52
WALL BOX1
WALL BOX2
KRK-6794V-0
DWX1120-4ZV1-0
DWX1413SWD-4ZS1-0
DWX1324-0
DWX1112-A
MEMORY CLEAR
ROTATE MENU
TEST
REMOTE SENSOR
1
2
3
4
5
6
A
B
C
D

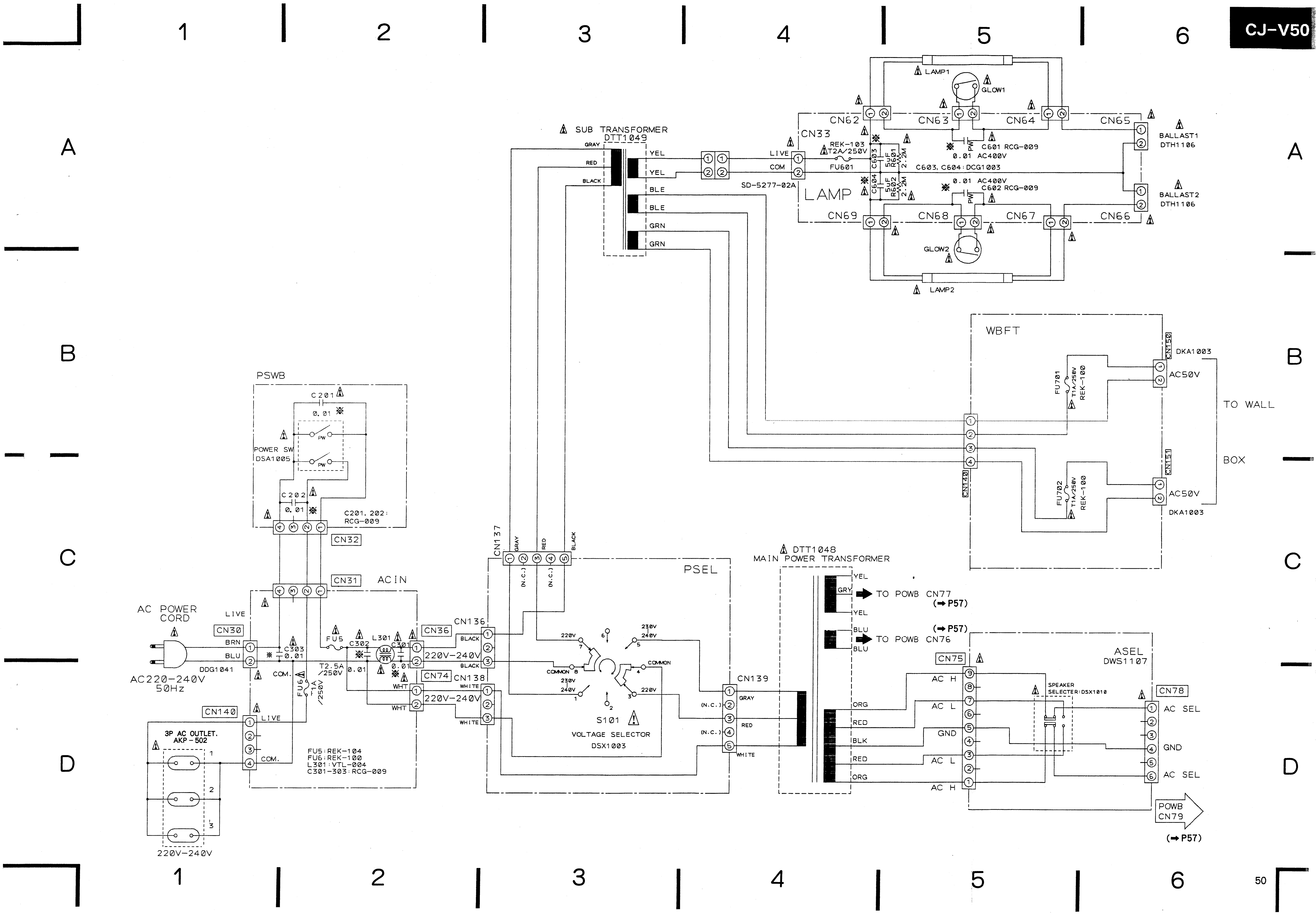
4.1.3 PSEL, ACIN, PSWB, LAMP, WBFT AND ASEL

This P.C.B. connection diagram is viewed from the foil side.

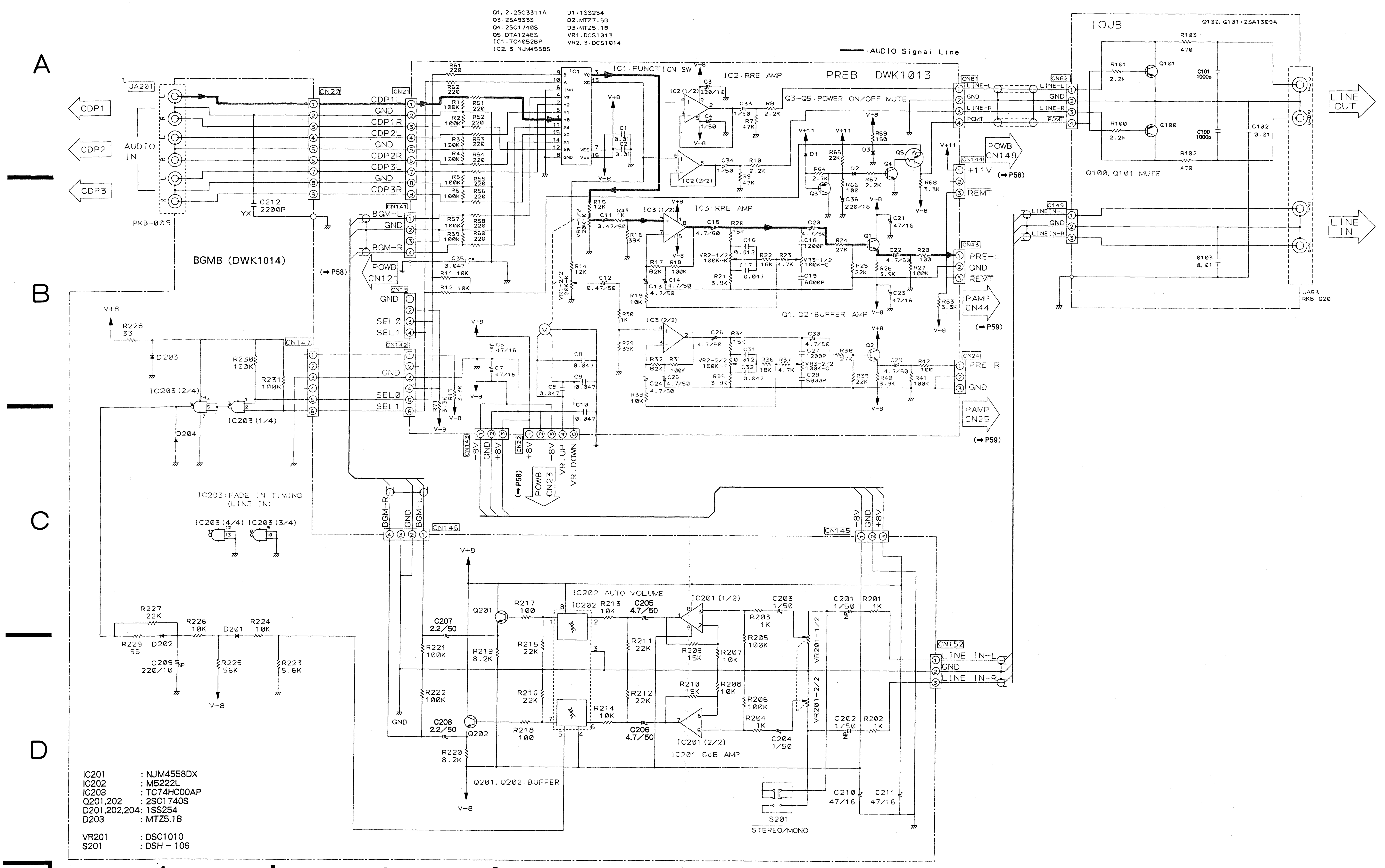

MAIN POWER TRANSFORMER ⚠
CN77
POWB
CN76
YEL
GRY
BLU
ORG
RED
BLK
WHT
POWB CN79
ASEL DW51107-A
SPEAKER SELECTOR
CN78
CN75
DNX1369-A
ASEL (DWS1107)
PSEL
CN139
CN138
CN137
CN136
DWS1117-A PSEL
VOLTAGE SELECTOR S101
DNX1371-A
DWR1069-A
SUB (FILTERED)
MAIN
CN29
CN28
CN140
BLACK
WHITE
FU52 T1.25A/250V
FU51 T1A/250V
L301
C301
C302
C303
ACIN
CN31
CN30
DNX1
ACIN
3P AC OUTLET ⚠
AC220V – 240V 50Hz ⚠
SUB POWER TRANSFORMER ⚠
GRN
BLE
LAMP1 ⚠
GLOW1 ⚠
LAMP
LAMP1R
GLOW1
LAMP1L
CN64
CN63
CN62
BALLAST 1 ⚠
BALLAST 2 ⚠
BALLAST1
BALLAST2
CN61
CN66
DNX1408-A
DNX1151-A
LAMP
T2A/250V
F001
R601
R602
C601
C602
C603
C604
LIVE
AC IN
COM
CN32
LAMP2R
GLOW2
LAMP2L
CN67
CN68
CN69
GLOW2 ⚠
LAMP2 ⚠
WBFT
CN149
FU701 T1A/250V
FU702 T1A/250V
CN150
CN151
DNX1474-A
WBFT DWX1184-A
WALL BOX2
WALL BOX1
PSWB
DWS1115-A
POWER SW
CN52
C505
C503
DNX1370-A
PSWB
A
B
C
D
1
2
3
4
5
6

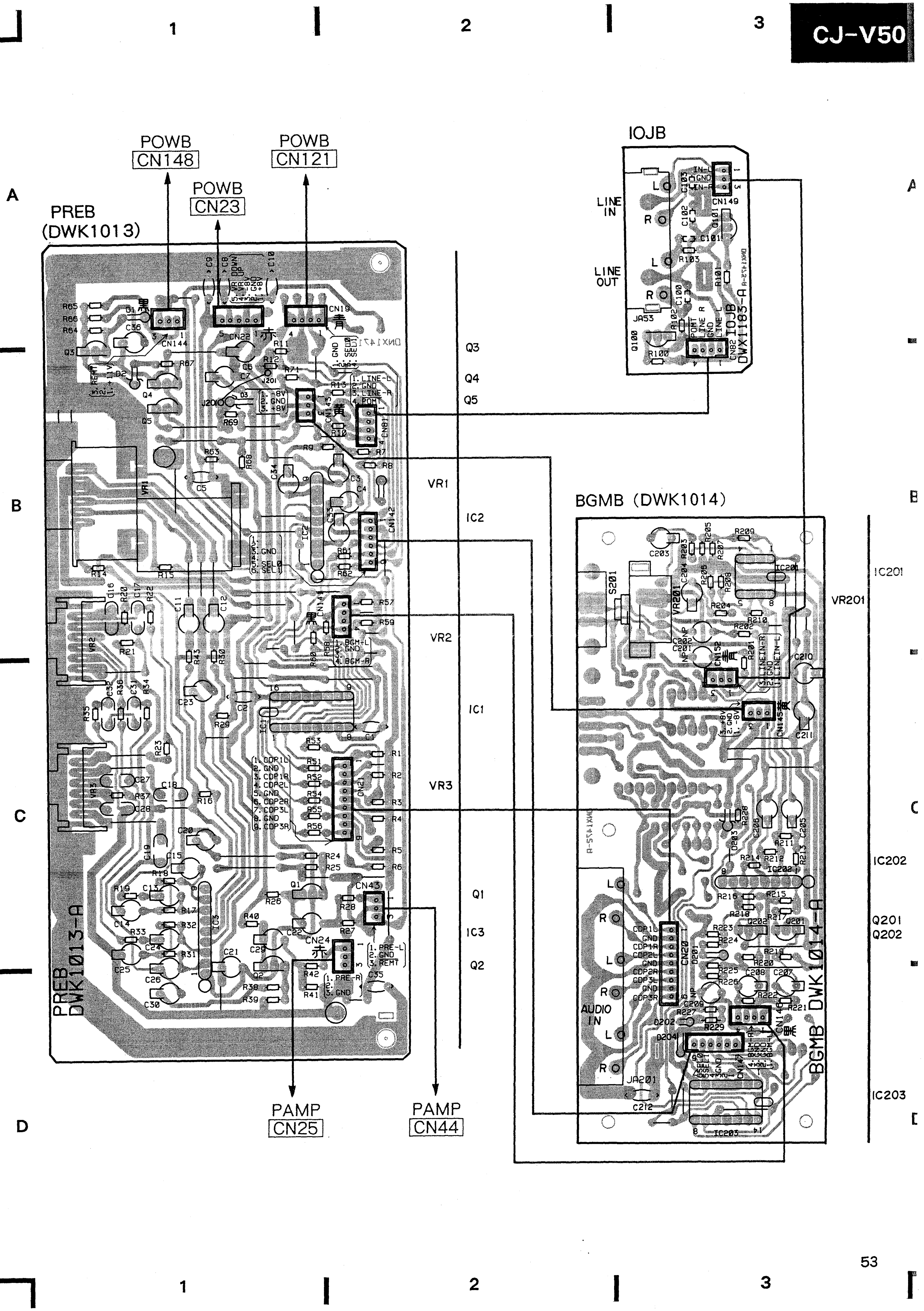
4.1.3 PSEL, ACIN, PSWB, LAMP, WBFT AND ASEL


PSEL
CN136
CN137
CN138
CN139
DWS1117-A
PSEL
VOLTAGE SELECTOR S101
DNX1571-A
MAIN POWER TRANSFORMER
YEL
GRY
YEL
BLU
BLU
CN77
CN76
POWB
POWB
CN79
GRY
RED
WHT
ORG
RED
BLK
RED
ORG
ASEL DWS1107-A
SPEAKER SELECTOR
CN75
CN78
DNX1289-A
ASEL (DWS1107)
DWR1069-A
MAIN
SUB (FILTERED)
CN140
CN74
CN36
WHITE
BLACK
C301
FU6 T1A/250V
FU5 T2.5A/250V
L301
C302
C303
ACIN
CN31
CN30
BLACK
WHITE
ACIN
3P AC OUTLET
AC220V – 240V
50Hz
PSWB
DWS1115-A
POWER SW
C202
C201
CN32
PSWB
SUB POWER TRANSFORMER
GRY
RED
BLK
YEL
YEL
BLE
BLE
GRN
GRN
WBFT
CN140
FU702 T1A/250V
FU701 T1A/250V
CN151
CN150
WBFT DWX1184-A
DNX1474-A
WALL BOX1
WALL BOX2
LAMP1
GLOW1
LAMP
LAMP1L
GLOW1
LAMP1R
CN62
CN63
CN64
T2A/250V
FU601
C601
R601
C603
LAMP DWX1151-A DNX1408-A
BALLAST1
CN65
BALLAST 1
LIVE
AC IN
COM
CN33
C604
C602
R602
CN66
BALLAST2
BALLAST 2
CN69
CN68
CN67
LAMP2L
GLOW2
LAMP2R
GLOW2
LAMP2

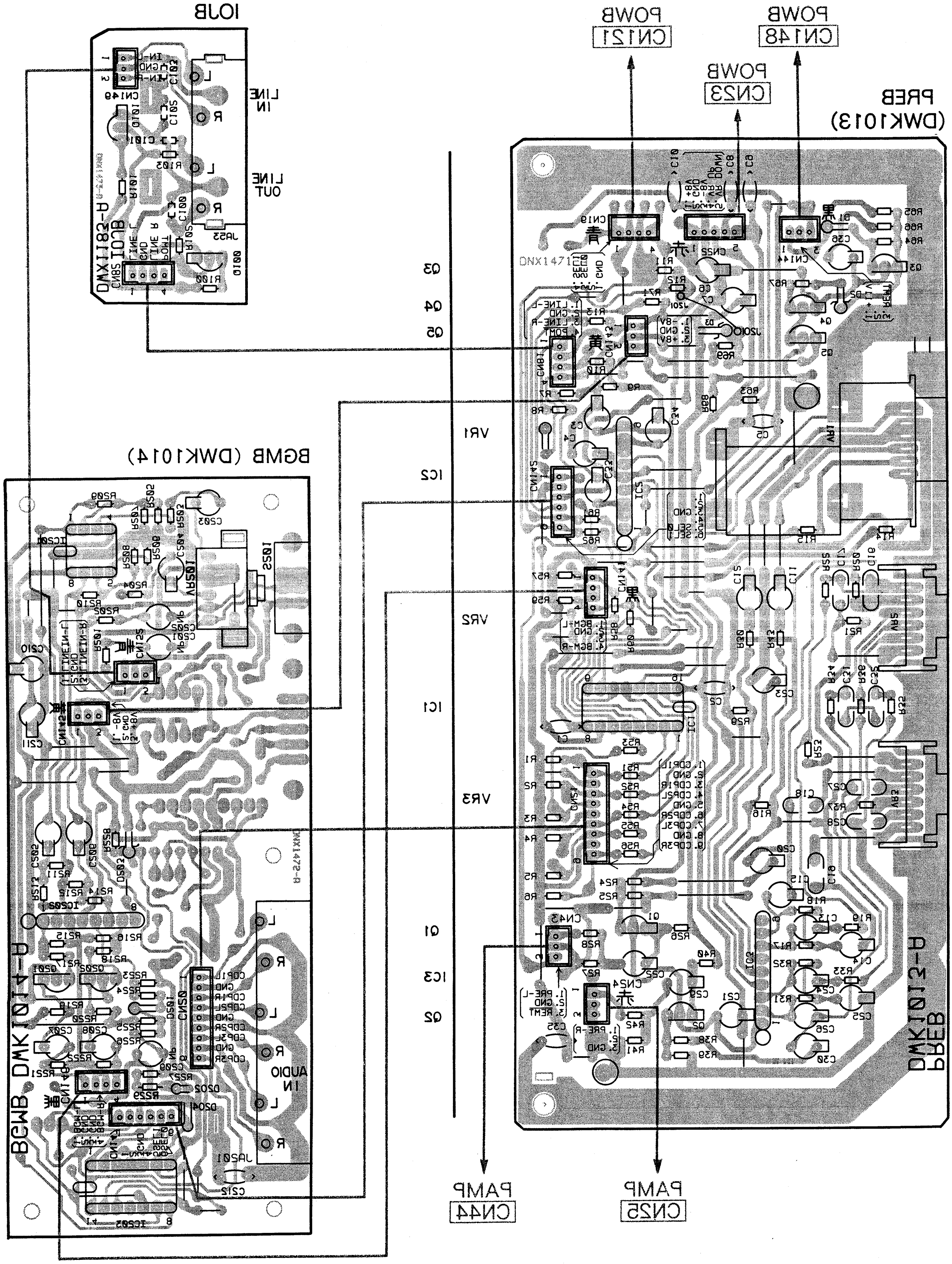

1
2
3
4
5
6
A
B
C
D
SUB TRANSFORMER
DTT1049
GRAY
RED
BLACK
YEL
YEL
BLE
BLE
GRN
GRN
LAMP1
GLOW1
CN62
CN63
CN64
CN65
CN33
LIVE
COM
SD-5277-02A
REK-103
T2A/250V
FU601
C603
C604
5μF
R601
R602
2.2M
C601 RCG-009
0.01 AC400V
C603, C604 : DCG1003
C602 RCG-009
LAMP
BALLAST1
DTH1106
BALLAST2
DTH1106
CN69
CN68
CN67
CN66
GLOW2
LAMP2
PW
WBFT
CN150
DKA1003
AC50V
FU701
T1A/250V
REK-100
TO WALL
BOX
CN151
FU702
CN140
PSWB
C201
0.01
POWER SW
DSA1005
C202
C201, 202:
RCG-009
CN32
CN31
ACIN
CN137
(N.C.)
PSEL
DTT1048
MAIN POWER TRANSFORMER
GRY
TO POWB CN77
(➡P57)
BLU
TO POWB CN76
AC POWER
CORD
LIVE
CN30
BRN
BLU
C303
0.01
DDG1041
COM.
AC220-240V
50Hz
FU5
C302
L301
C301
CN36
220V-240V
T2.5A
/250V
CN74
CN136
CN138
WHT
WHITE
FU6
T1A
/250V
CN140
3P AC OUTLET.
AKP-502
220V-240V
FU5:REK-104
FU6:REK-100
L301:VTL-004
C301-303:RCG-009
220V
230V
240V
COMMON
S101
VOLTAGE SELECTOR
DSX1003
CN139
ORG
CN75
ASEL
DWS1107
AC H
AC L
GND
SPEAKER
SELECTER:DSX1010
CN78
AC SEL
POWB
CN79

4.1.4 BGMB, PREB AND IOJB


1 2 3 4 5 6
A B C D
Q1, 2:2SC3311A
Q3:2SA933S
Q4:2SC1740S
Q5:DTA124ES
IC1:TC4052BP
IC2, 3:NJM4558S
D1:1SS254
D2:MTZ7.5B
D3:MTZ5.1B
VR1:DCS1013
VR2, 3:DCS1014
AUDIO Signal Line
PREB DWK1013
IC1 FUNCTION SW
IC2 RRE AMP
IC3 RRE AMP
Q3–Q5 POWER ON/OFF MUTE
Q1, Q2 BUFFER AMP
IOJB
Q100, Q101:2SA1309A
Q100, Q101 MUTE
LINE OUT
LINE IN
JA53 RKB-020
JA201
PKB-009
CDP1
CDP2
CDP3
AUDIO IN
BGMB (DWK1014)
POWB CN121
POWB CN148
POWB CN23
PAMP CN44
PAMP CN25
(➡ P58)
(➡ P59)
CN20 CN21 CN141 CN19 CN142 CN147 CN143 CN22 CN146 CN145 CN152 CN81 CN82 CN144 CN149 CN43 CN24
CDP1L GND CDP1R CDP2L GND CDP2R CDP3L GND CDP3R
BGM-L GND BGM-R
SEL0 SEL1
LINE-L GND LINE-R POWT
PRE-L GND REMT
PRE-R GND
+11V REMT
LINE IN-L GND LINE IN-R
-8V GND +8V
VR. UP VR. DOWN
IC203 FADE IN TIMING (LINE IN)
IC203 (1/4) IC203 (2/4) IC203 (3/4) IC203 (4/4)
IC202 AUTO VOLUME
IC201 (1/2) IC201 (2/2)
IC201 6dB AMP
Q201, Q202 BUFFER
S201 STEREO/MONO
VR201-1/2 VR201-2/2
IC201 : NJM4558DX
IC202 : M5222L
IC203 : TC74HC00AP
Q201,202 : 2SC1740S
D201,202,204: 1SS254
D203 : MTZ5.1B
VR201 : DSC1010
S201 : DSH – 106

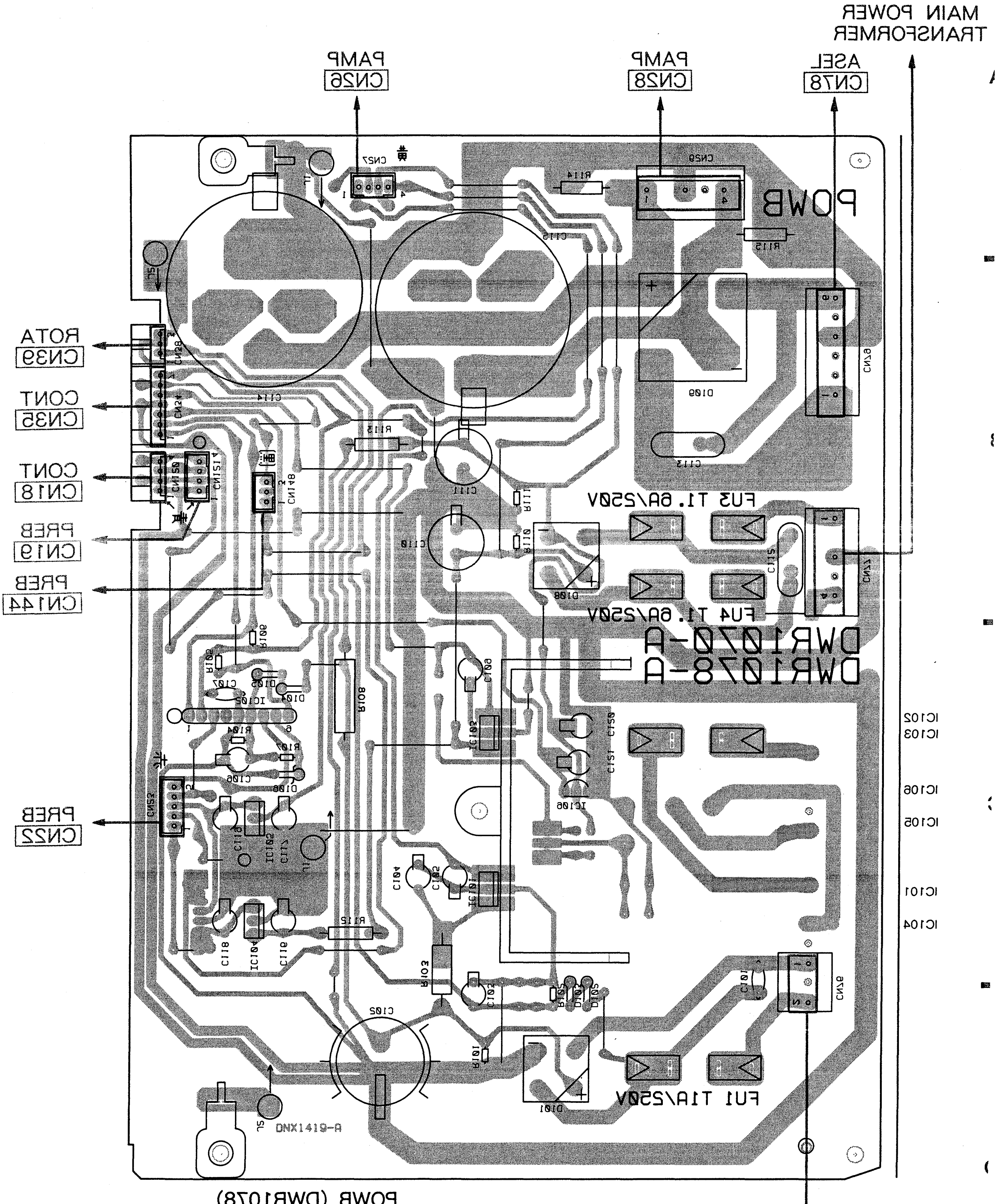

1
2
3
A
B
C
D
POWB
CN148
POWB
CN23
POWB
CN121
PREB
(DWK1013)
IOJB
LINE IN
LINE OUT
L
R
CN149
IN-L
GND
IN-R
CN82
POMT
LINE R
GND
LINE L
DWX1183-A
IOJB
Q3
Q4
Q5
VR1
IC2
VR2
IC1
VR3
Q1
IC3
Q2
CN144
CN22
CN19
CN143
CN81
CN142
CN141
CN21
CN43
CN24
1. LINE-L
2. GND
3. LINE-R
4. POMT
1. -8V
2. GND
3. +8V
1. CDP1L
2. GND
3. CDP1R
4. CDP2L
5. GND
6. CDP2R
7. CDP3L
8. GND
9. CDP3R
1. BGM-L
2. GND
3. GND
4. BGM-R
1. PRE-L
2. GND
3. REMT
1. PRE-R
2. GND
PREB
DWK1013-A
BGMB (DWK1014)
IC201
VR201
IC202
Q201
Q202
IC203
S201
VR201
CN152
CN145
CN20
CN146
CN147
AUDIO IN
JA201
BGMB DWK1014-A
PAMP
CN25
PAMP
CN44

This P. C. B. connection diagram is viewed from the foil side.


IOJB
POWB
CN121
POWB
CN148
POWB
CN23
PREB
(DWK1013)
LINE IN
LINE OUT
BGMB (DWK1014)
Q3
Q4
Q5
VR1
IC2
VR2
IC1
VR3
Q1
IC3
Q2
VR201
IC20
AUDIO IN
PAMP
CN44
PAMP
CN25
PREB DWK1013-U
BGMB DWK1014-U
DNX1471
A
B
C
D

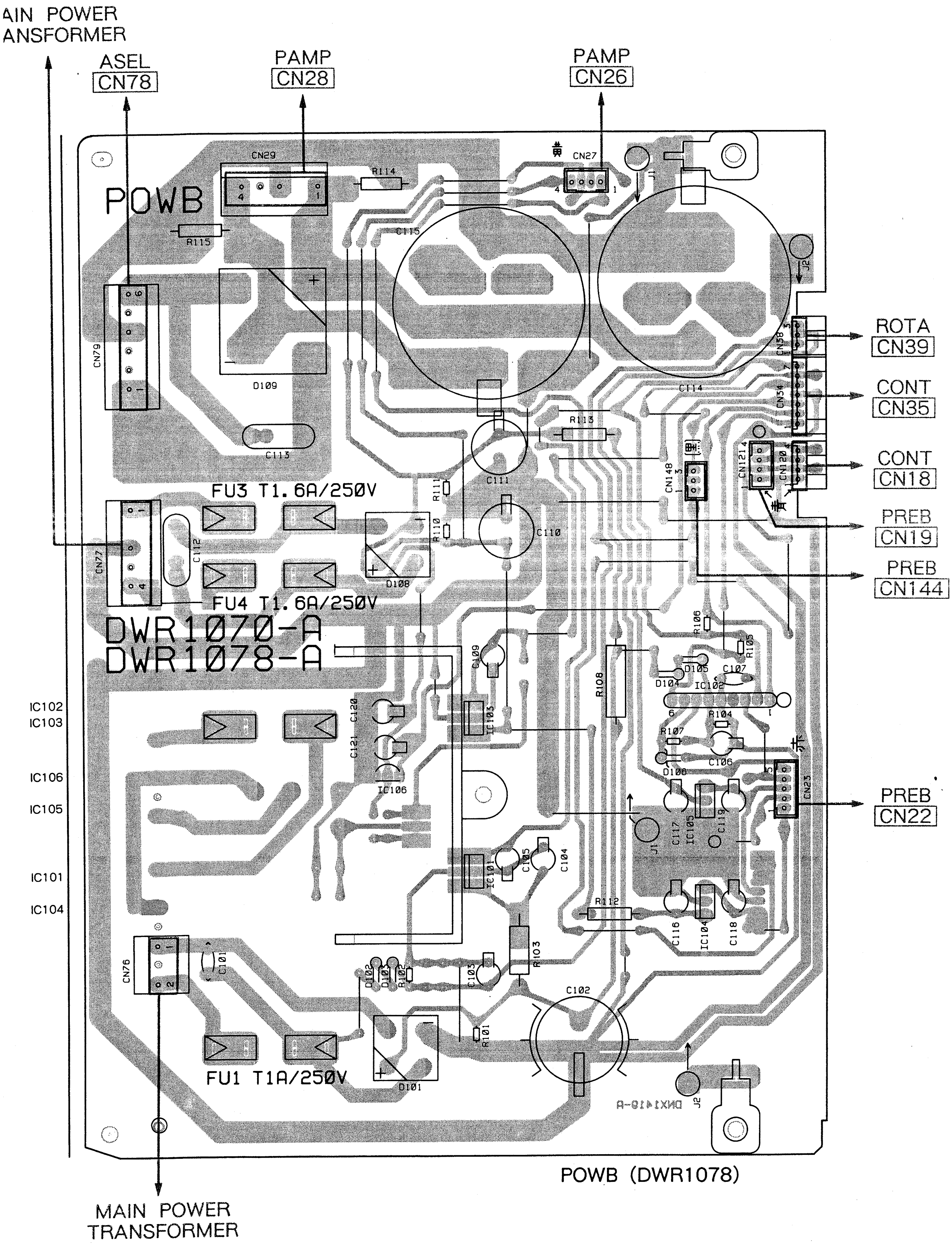
This P. C. B. connection diagram is viewed from the foil side.

4.1.5 POWB

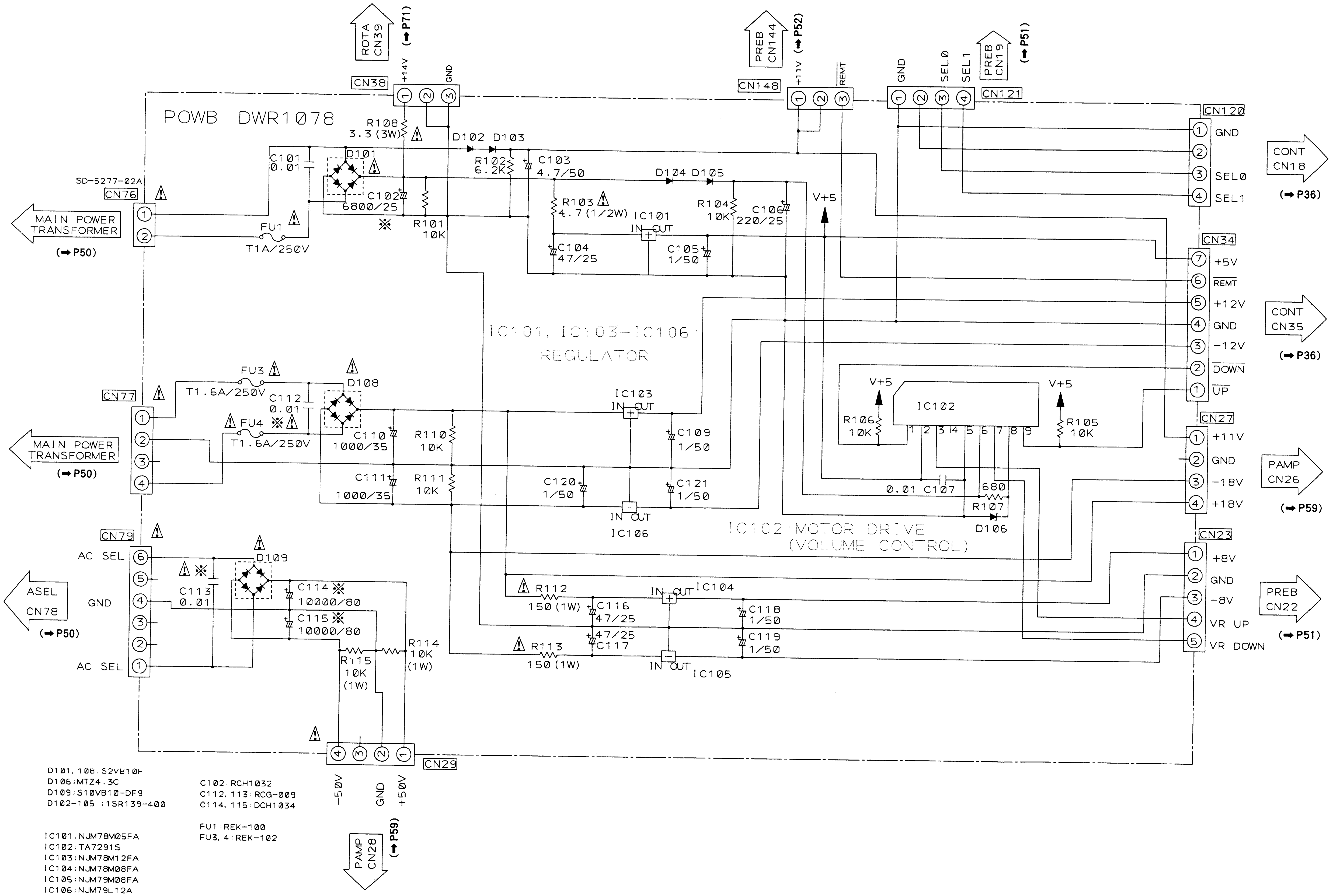

MAIN POWER TRANSFORMER
PAMP
CN26
PAMP
CN28
ASEL
CN78
ROTA
CN39
CONT
CN35
CONT
CN18
PREB
CN19
PREB
CN144
PREB
CN22
POWB
CN27
CN29
CN79
CN71
CN76
CN38
CN34
CN150
CN121
CN148
CN52
R114
R115
C115
C114
C113
C111
C110
R113
R111
R110
D109
D108
FU3 T1.6A/250V
FU4 T1.6A/250V
DWR1070-A
DWR1078-A
IC102
IC103
IC106
IC105
IC101
IC104
R108
R109
R106
C107
D105
D104
R104
R107
C106
D106
C116
C118
C119
C117
R112
C104
C102
R103
R101
D101
C101
FU1 T1A/250V
DNX1419-A
JC
MAIN POWER TRANSFORMER

POWB (DWR1078)

.1.5 POWB


AIN POWER
ANSFORMER
ASEL
CN78
PAMP
CN28
PAMP
CN26
ROTA
CN39
CONT
CN35
CONT
CN18
PREB
CN19
PREB
CN144
PREB
CN22
MAIN POWER
TRANSFORMER
POWB
DWR1070-A
DWR1078-A
FU3 T1.6A/250V
FU4 T1.6A/250V
FU1 T1A/250V
CN29
CN27
CN79
CN77
CN76
CN38
CN34
CN148
CN121
CN120
CN23
R114
R115
R113
R111
R110
R106
R105
R108
R104
R107
R112
R103
R102
R101
C115
C114
C113
C111
C112
C110
C109
C120
C121
C107
C106
C117
C119
C105
C104
C116
C118
C101
C103
C102
D109
D108
D105
D104
D106
D102
D103
D101
IC102
IC103
IC106
IC105
IC101
IC104
J1
J2
DNX1419-A

POWB (DWR1078)


1
2
3
4
5
6
A
B
C
D
POWB DWR1078
ROTA CN39 (➡ P71)
CN38
+14V
GND
PREB CN144 (➡ P52)
CN148
+11V
REMT
PREB CN19 (➡ P51)
CN121
GND
SEL0
SEL1
CN120
GND
SEL0
SEL1
CONT CN18 (➡ P36)
R108 3.3(3W)
D102 D103
C101 0.01
D101
R102 6.2K
C103 4.7/50
D104 D105
SD-5277-02A
CN76
MAIN POWER TRANSFORMER (➡ P50)
FU1 T1A/250V
C102 6800/25
R101 10K
R103 4.7(1/2W)
IC101
IN OUT
R104 10K
C106 220/25
V+5
C104 47/25
C105 1/50
CN34
+5V
REMT
+12V
GND
-12V
DOWN
UP
CONT CN35 (➡ P36)
IC101, IC103-IC106 REGULATOR
CN77
MAIN POWER TRANSFORMER (➡ P50)
FU3 T1.6A/250V
D108
C112 0.01
FU4 T1.6A/250V
C110 1000/35
R110 10K
IC103
IN OUT
C109 1/50
V+5
R106 10K
IC102
1 2 3 4 5 6 7 8 9
V+5
R105 10K
CN27
+11V
GND
-18V
+18V
PAMP CN26 (➡ P59)
C111 1000/35
R111 10K
C120 1/50
C121 1/50
0.01 C107
680 R107
D106
IN OUT
IC106
IC102 MOTOR DRIVE (VOLUME CONTROL)
CN79
AC SEL
GND
AC SEL
ASEL CN78 (➡ P50)
C113 0.01
D109
C114 10000/80
C115 10000/80
R114 10K (1W)
R115 10K (1W)
R112 150(1W)
C116 47/25
IN OUT IC104
C118 1/50
R113 150(1W)
47/25 C117
C119 1/50
IN OUT IC105
CN23
+8V
GND
-8V
VR UP
VR DOWN
PREB CN22 (➡ P51)
CN29
-50V
GND
+50V
PAMP CN28 (➡ P59)

D101, 108 : S2VB10F
D106 : MTZ4.3C
D109 : S10VB10-DF9
D102-105 : 1SR139-400

IC101 : NJM78M05FA
IC102 : TA7291S
IC103 : NJM78M12FA
IC104 : NJM78M08FA
IC105 : NJM79M08FA
IC106 : NJM79L12A

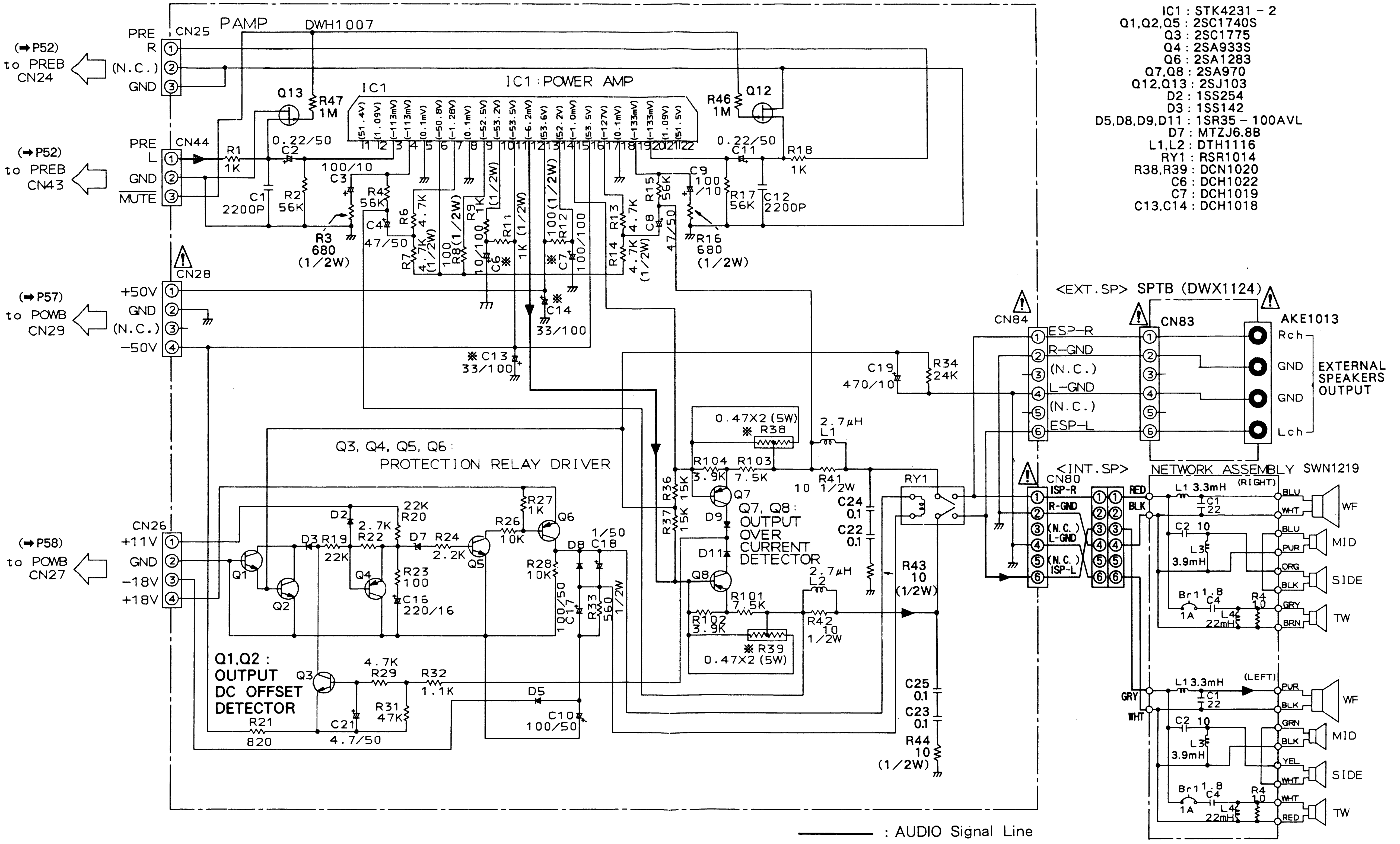
C102 : RCH1032
C112, 113 : RCG-009
C114, 115 : DCH1034

FU1 : REK-100
FU3, 4 : REK-102

4.1.6 PAMP, SPTB AND NETWORK ASSEMBLY

PAMP

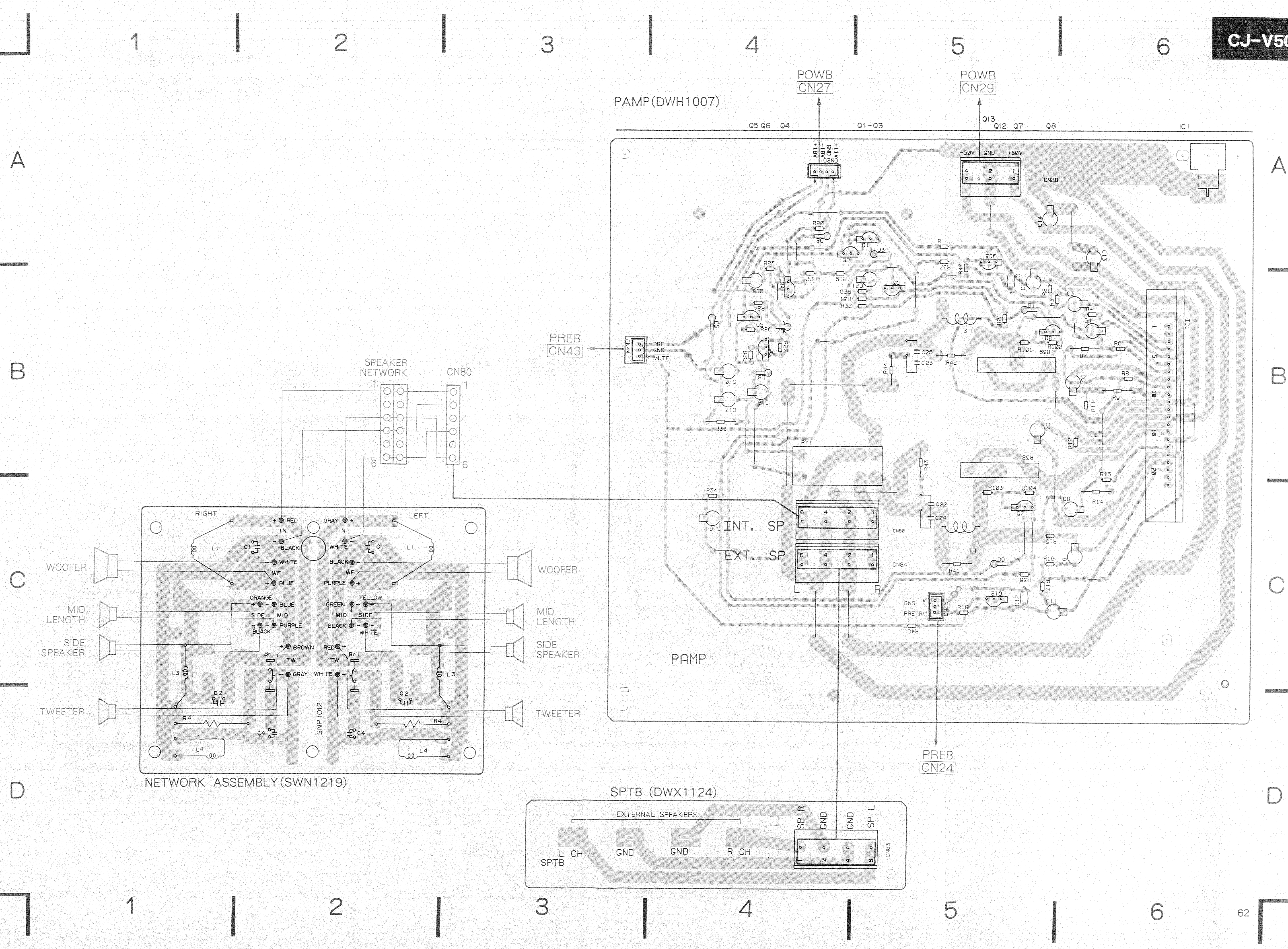
IC1 : STK4231 - 2
Q1,Q2,Q5 : 2SC1740S
Q3 : 2SC1775
Q4 : 2SA933S
Q6 : 2SA1283
Q7,Q8 : 2SA970
Q12,Q13 : 2SJ103
D2 : 1SS254
D3 : 1SS142
D5,D8,D9,D11 : 1SR35 - 100AVL
D7 : MTZJ6.8B
L1,L2 : DTH1116
RY1 : RSR1014
R38,R39 : DCN1020
C6 : DCH1022
C7 : DCH1019
C13,C14 : DCH1018


PAMP
DWH1007
CN25
PRE R (N.C.) GND
(➡P52) to PREB CN24
CN44
PRE L GND MUTE
(➡P52) to PREB CN43
IC1
IC1 : POWER AMP
Q13 R47 1M
Q12 R46 1M
R1 1K
C2 0.22/50
C11 0.22/50
R18 1K
C1 2200P
R2 56K
C3 100/10
R4 56K
R3 680 (1/2W)
C4 47/50
R6 4.7K
R7 4.7K (1/2W)
R8 100 (1/2W)
R9 1K (1/2W)
C5 100/10
R11 1K (1/2W)
R12 100 (1/2W)
C7 100/100
R13 4.7K
R14 4.7K (1/2W)
C8 47/50
R15 56K
C9 100/10
R17 56K
C12 2200P
R16 680 (1/2W)
(51.4V) (1.09V) (-113mV) (-113mV) (0.1mV) (-50.8V) (-1.28V) (0.1mV) (-52.5V) (-53.2V) (-53.5V) (-6.2mV) (53.6V) (52.2V) (-1.0mV) (53.5V) (-127V) (0.1mV) (-133mV) (-133mV) (1.09V) (51.5V)
CN28
+50V GND (N.C.) -50V
(➡P57) to POWB CN29
C13 33/100
C14 33/100
Q3, Q4, Q5, Q6 : PROTECTION RELAY DRIVER
CN26
+11V GND -18V +18V
(➡P58) to POWB CN27
Q1 Q2 Q4 Q5 Q6
D2 D3 D7 D8
R19 22K
R22 2.7K
R20 22K
R24 2.2K
R26 10K
R27 1K
R23 100
C16 220/16
R28 10K
C17 100/50
C18 1/50
R33 560 1/2W
Q1,Q2 : OUTPUT DC OFFSET DETECTOR
Q3
R29 4.7K
R32 1.1K
R31 47K
R21 820
C21 4.7/50
D5
C10 100/50
R36 15K
R37 15K
Q7 Q8 D9 D11
Q7, Q8 : OUTPUT OVER CURRENT DETECTOR
R104 3.9K
R103 7.5K
R38 0.47X2 (5W)
R101 7.5K
R102 3.9K
R39 0.47X2 (5W)
L1 2.7μH
L2 2.7μH
R41 10 1/2W
R42 10 1/2W
C24 0.1
C22 0.1
R43 10 (1/2W)
C25 0.1
C23 0.1
R44 10 (1/2W)
RY1
C19 470/10
R34 24K
<EXT.SP> SPTB (DWX1124)
CN84
ESP-R R-GND (N.C.) L-GND (N.C.) ESP-L
CN83
AKE1013
Rch GND GND Lch
EXTERNAL SPEAKERS OUTPUT
<INT.SP>
CN80
ISP-R R-GND (N.C.) L-GND (N.C.) ISP-L
NETWORK ASSEMBLY SWN1219
(RIGHT) (LEFT)
RED BLK GRY WHT
L1 3.3mH C1 22 C2 10 L3 3.9mH Br1 1A C4 1.8 L4 22mH R4 10
BLU WHT BLU PUR ORG BLK GRY BRN
PUR BLK GRN BLK YEL WHT WHT RED
WF MID SIDE TW

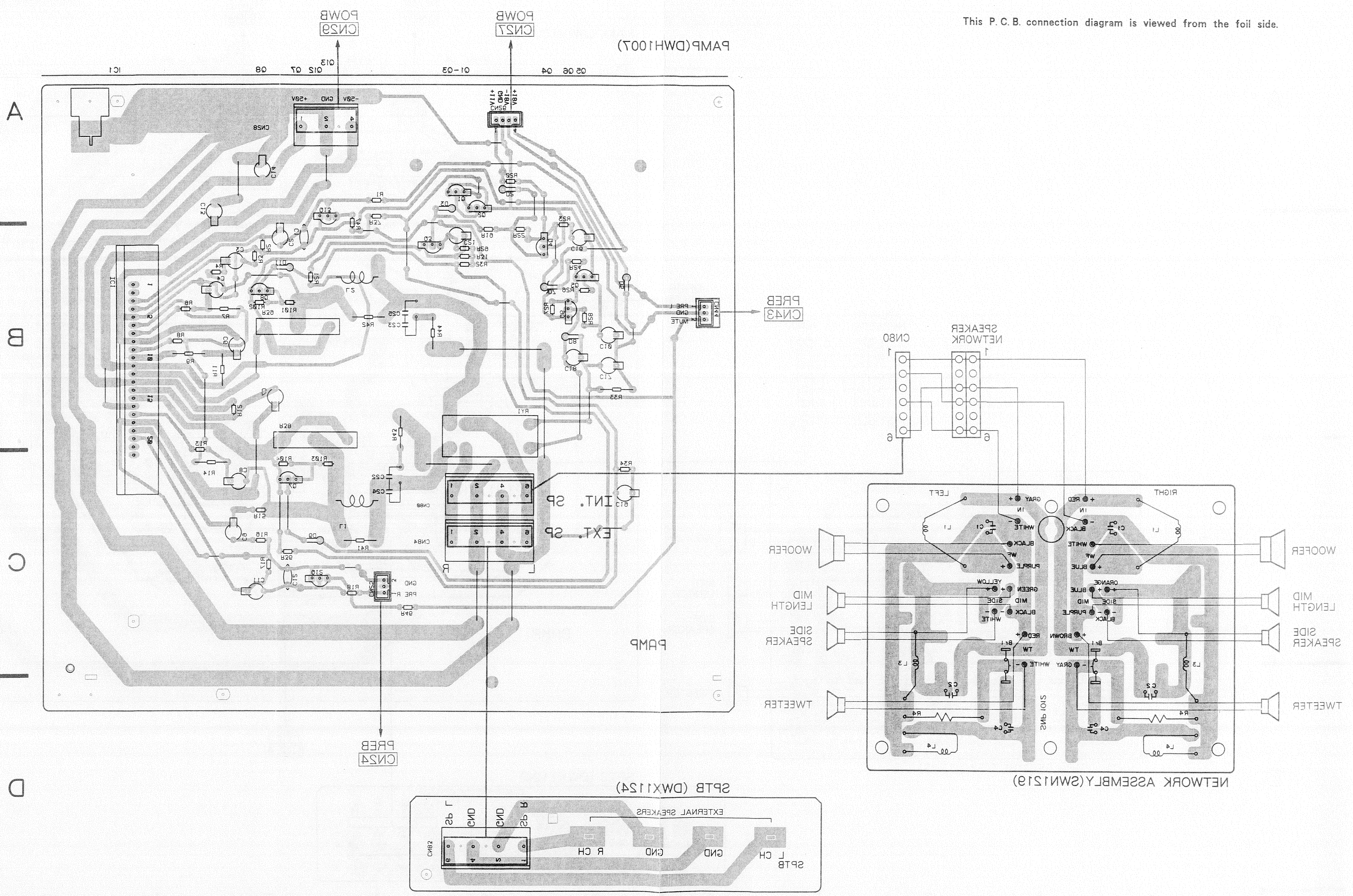
——— : AUDIO Signal Line

NETWORK ASSEMBLY

L1 : STH1100
L3 : STH1021
L4 : STH - 327
Br1 : SSG - 004

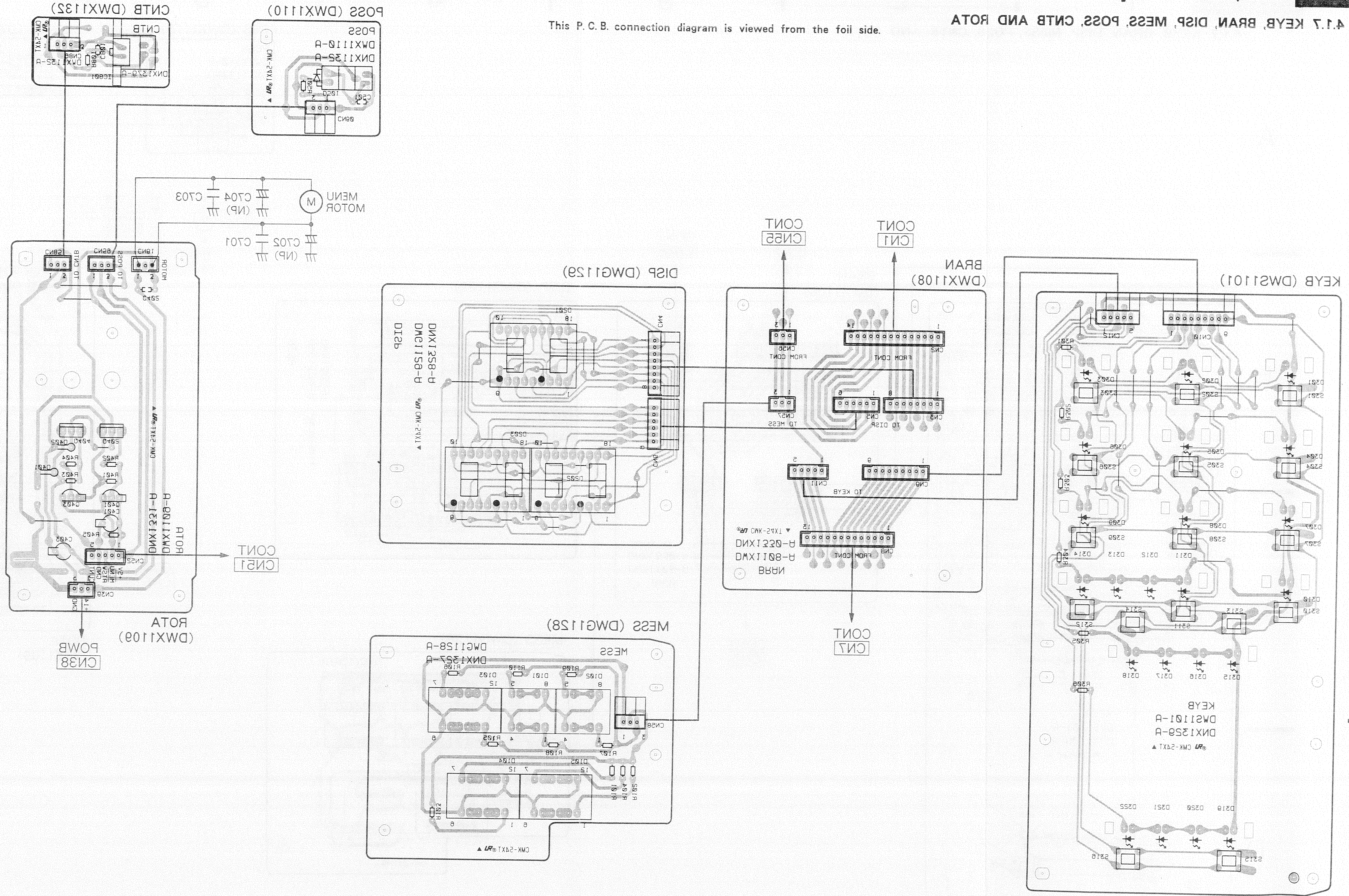

1
2
3
4
5
6
A
B
C
D
POWB
CN27
POWB
CN29
PAMP(DWH1007)
Q5 Q6
Q4
Q1-Q3
Q13
Q12
Q7
Q8
IC1
+18V
-18V
GND
+11V
CN26
-50V
GND
+50V
CN28
PREB
CN43
CN44
PRE L
GND
MUTE
RY1
INT. SP
EXT. SP
CN80
CN84
L
R
GND
PRE R
CN25
PAMP
PREB
CN24
SPEAKER
NETWORK
CN80
RIGHT
LEFT
+ RED
IN
- BLACK
GRAY +
IN
WHITE -
WHITE
WF
+ BLUE
BLACK
WF
PURPLE +
ORANGE
+ BLUE
SIDE
MID
- PURPLE
BLACK
GREEN +
YELLOW
MID
SIDE
BLACK -
WHITE
+ BROWN
TW
- GRAY
RED +
TW
WHITE -
Br1
L1
C1
L3
C2
R4
C4
L4
SNP 1012
WOOFER
MID
LENGTH
SIDE
SPEAKER
TWEETER
NETWORK ASSEMBLY(SWN1219)
SPTB (DWX1124)
EXTERNAL SPEAKERS
L CH
GND
GND
R CH
SPTB
SP R
GND
GND
SP L
CN83

This P. C. B. connection diagram is viewed from the foil side.

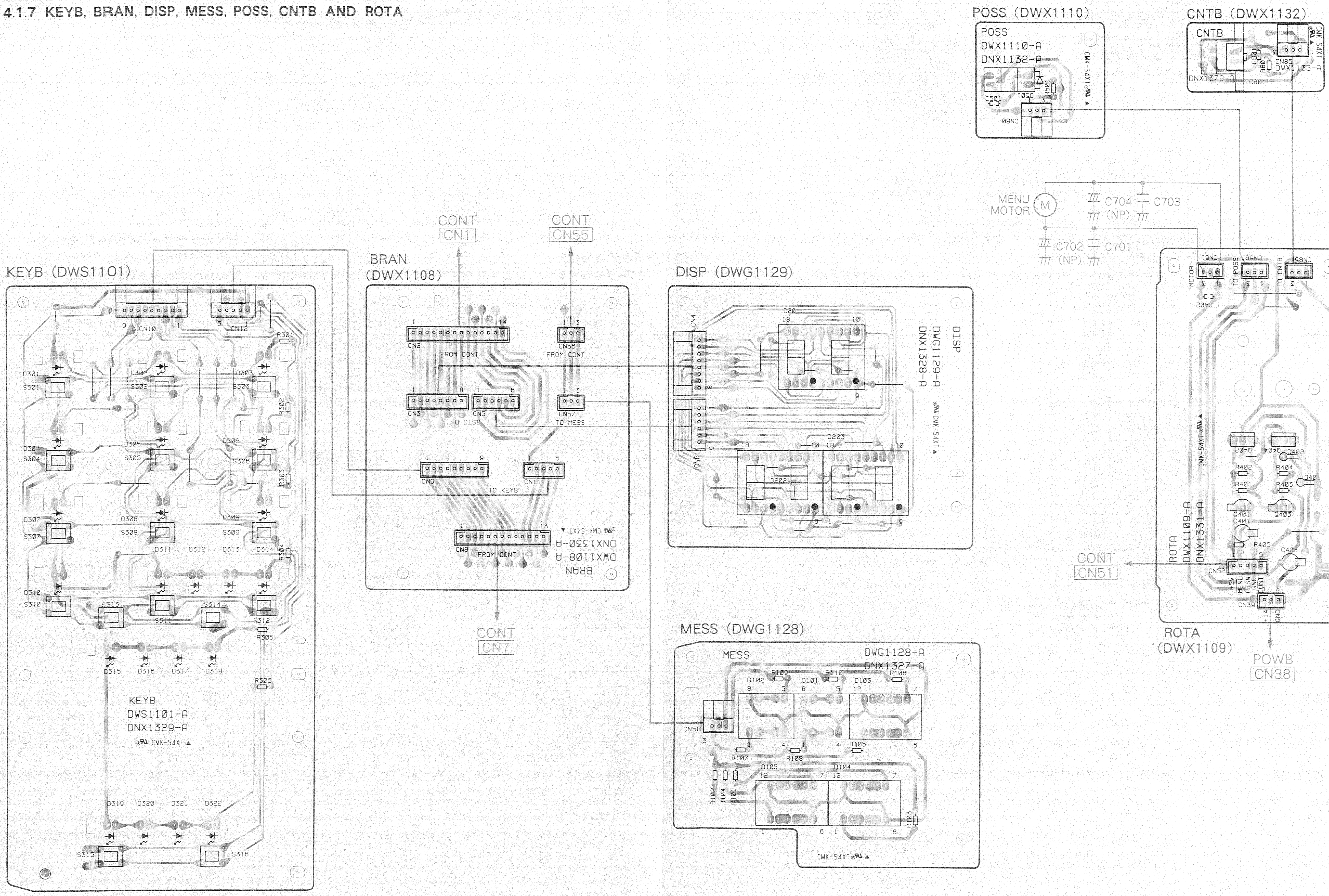

PAMP (DWH1007)
POWB CN29
POWB CN27
PREB CN43
PREB CN24
IC1
CN28
CN26
CN44
RY1
INT. SP
EXT. SP
PAMP
CN80
SPEAKER NETWORK
NETWORK ASSEMBLY (SWN1219)
LEFT
RIGHT
WOOFER
MID LENGTH
SIDE SPEAKER
TWEETER
SPTB (DWX1124)
EXTERNAL SPEAKERS
CN82
SP L
GND
SP R
R CH
L CH
SPTB

4.1.7 KEYB, BRAN, DISP, MESS, POSS, CNTB AND ROTA

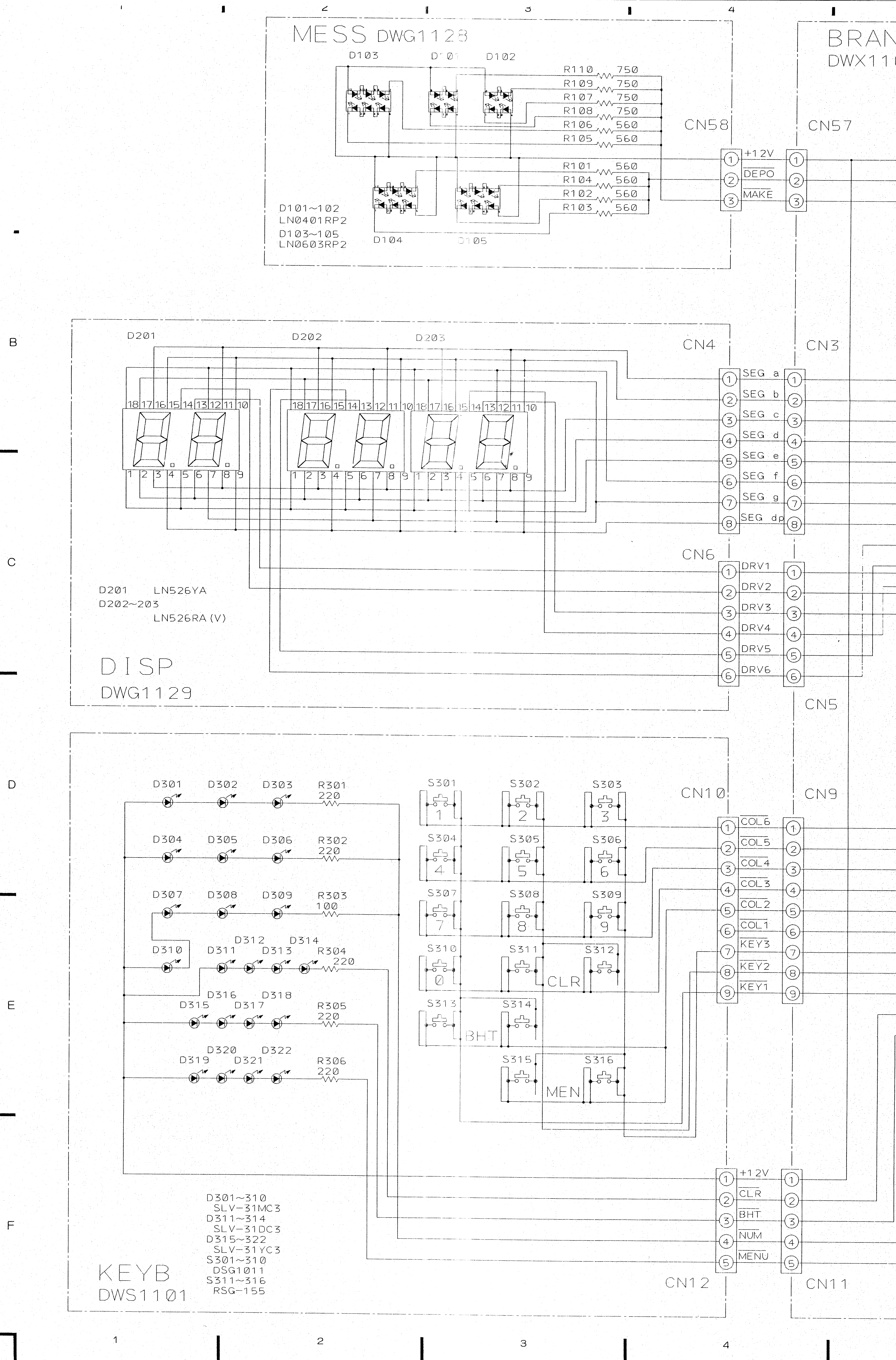
This P.C.B. connection diagram is viewed from the foil side.


CNTB (DWX1132)
CNTB
DWX1579-A
POSS (DWX1110)
POSS
DWX1110-A
DNX1132-A
MENU MOTOR
C703
C704 (NP)
C701
C702 (NP)
ROTA (DWX1109)
ROTA
DWX1109-A
DNX1551-A
CONT CN51
POWB CN38
DISP (DWG1129)
DISP
DWG1129-A
DNX1328-A
BRAN (DWX1108)
BRAN
DWX1108-A
DNX1330-A
CONT CN55
CONT CN1
CONT CN7
KEYB (DWS1101)
KEYB
DWS1101-A
DNX1329-A
MESS (DWG1128)
MESS
DWG1128-A
DNX1327-A

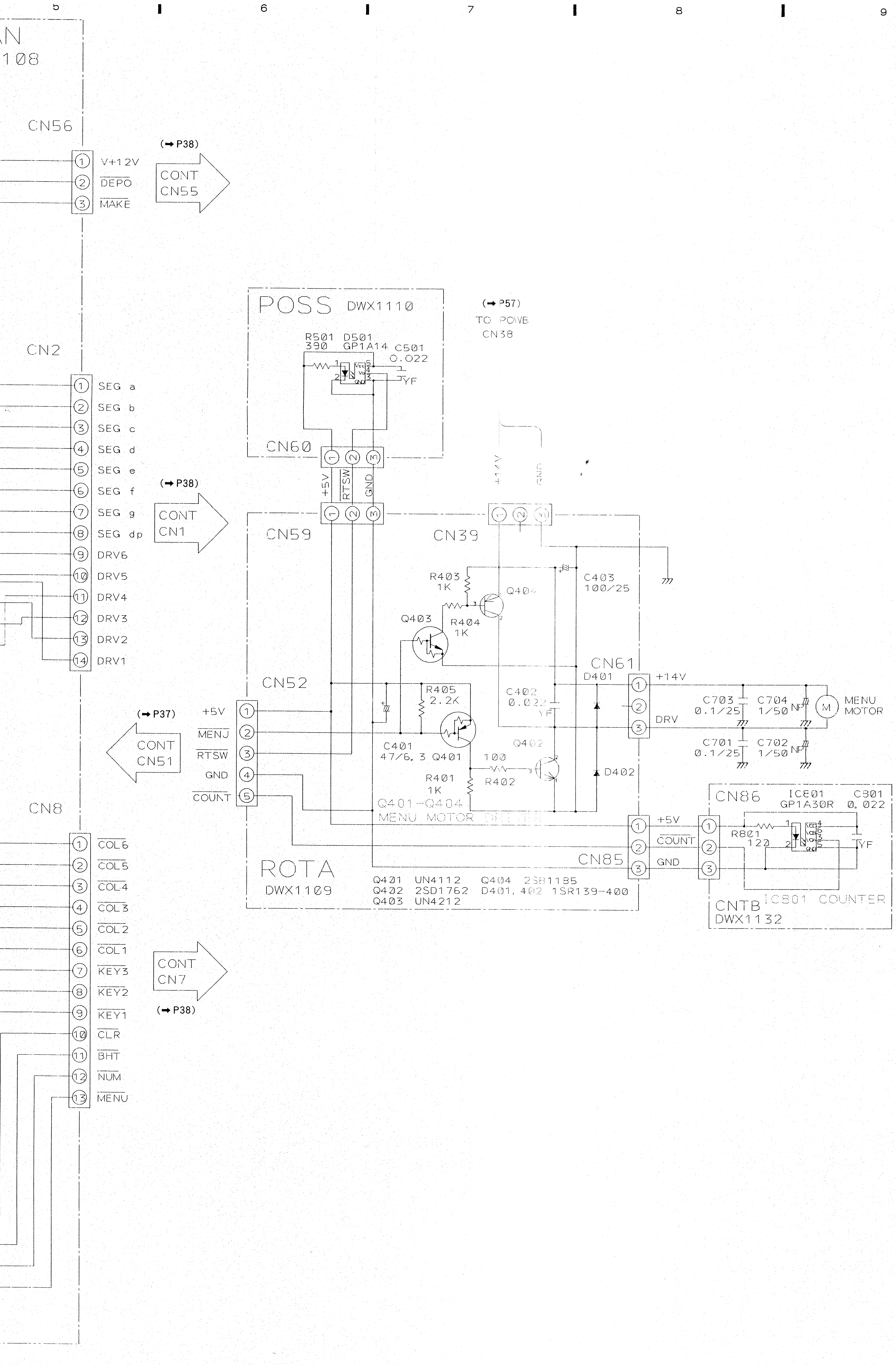
4.1.7 KEYB, BRAN, DISP, MESS, POSS, CNTB AND ROTA


POSS (DWX1110)
POSS
DWX1110-A
DNX1132-A
CN60
IC501
R501
C501
CNTB (DWX1132)
CNTB
DNX1379-A
DWX1132-A
IC801
C801
R801
CN80
MENU MOTOR
M
C704 (NP)
C703
C702 (NP)
C701
CONT CN1
CONT CN55
KEYB (DWS1101)
CN10
CN12
R301
R302
R303
R304
R305
R306
D301
D302
D303
D304
D305
D306
D307
D308
D309
D310
D311
D312
D313
D314
D315
D316
D317
D318
D319
D320
D321
D322
S301
S302
S303
S304
S305
S306
S307
S308
S309
S310
S311
S312
S313
S314
S315
S316
KEYB
DWS1101-A
DNX1329-A
CMK-54XT
BRAN (DWX1108)
CN2
FROM CONT
CN56
FROM CONT
CN3
CN5
TO DISP
CN57
TO MESS
CN9
CN11
TO KEYB
CN8
FROM CONT
BRAN
DWX1108-A
DNX1330-A
CMK-54XT
CONT CN7
DISP (DWG1129)
CN4
CN6
D201
D202
D203
DISP
DWG1129-A
DNX1328-A
CMK-54XT
MESS (DWG1128)
MESS
DWG1128-A
DNX1327-A
CN58
R101
R102
R103
R104
R105
R106
R107
R108
R109
R110
D101
D102
D103
D104
D105
CMK-54XT
CN61
MOTOR
CN59
TO POSS
CN85
TO CNTB
C402
D402
D401
Q401
Q402
Q403
R401
R402
R403
R404
R405
C401
C403
C404
ROTA
DWX1109-A
DNX1331-A
CMK-54XT
CN52
+5V
MENU
GND
CN39
+14
GND
CONT CN51
ROTA (DWX1109)
POWB CN38

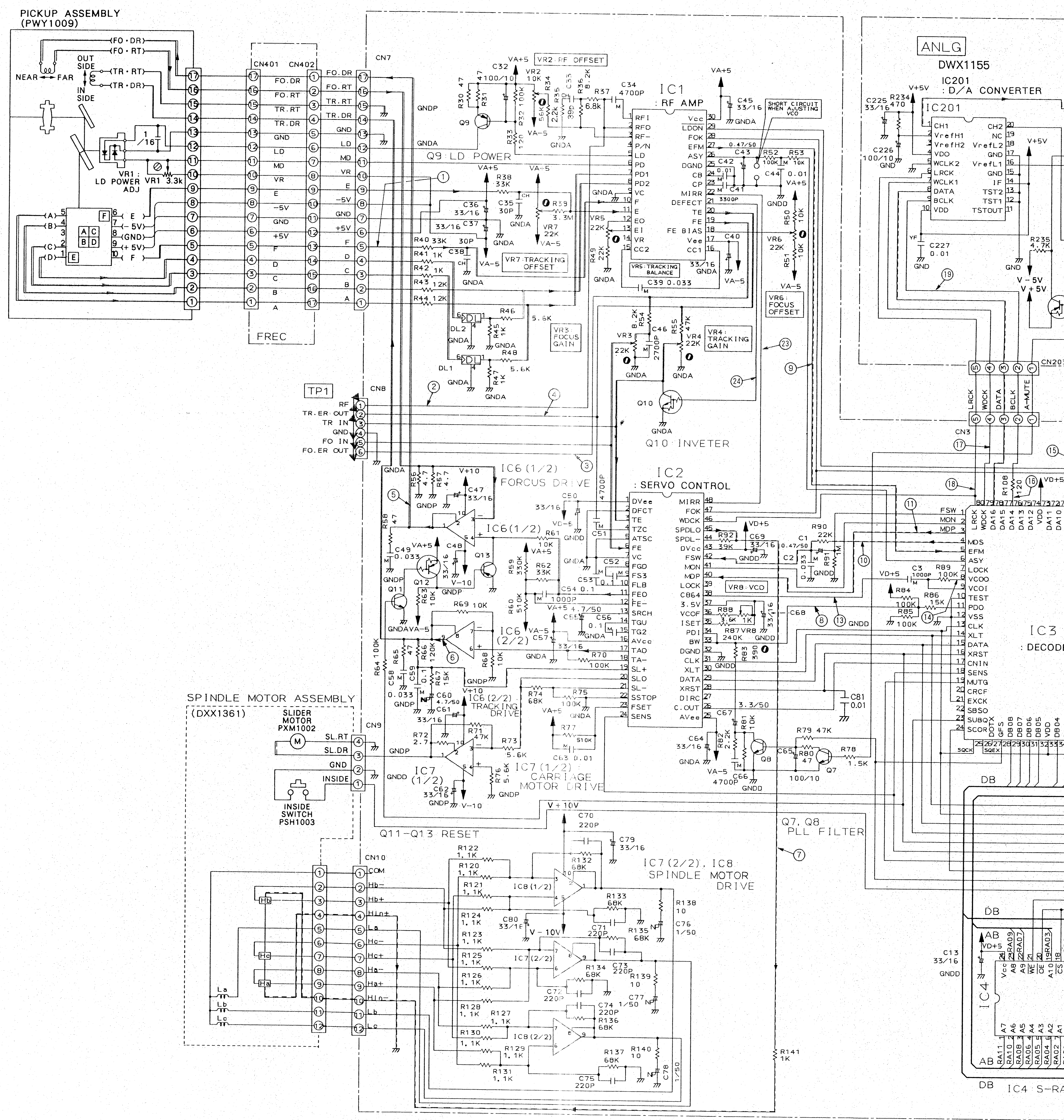
Pion 2885



1
2
3
4
B
C
D
E
F
MESS DWG1128
D103
D101
D102
R110 750
R109 750
R107 750
R108 750
R106 560
R105 560
R101 560
R104 560
R102 560
R103 560
D101~102
LN0401RP2
D103~105
LN0603RP2
D104
D105
CN58
CN57
BRAN
DWX11
+12V
DEPO
MAKE
D201
D202
D203
CN4
CN3
SEG a
SEG b
SEG c
SEG d
SEG e
SEG f
SEG g
SEG dp
18 17 16 15 14 13 12 11 10
1 2 3 4 5 6 7 8 9
CN6
DRV1
DRV2
DRV3
DRV4
DRV5
DRV6
D201 LN526YA
D202~203
LN526RA(V)
DISP
DWG1129
CN5
D301
D302
D303
R301 220
D304
D305
D306
R302 220
D307
D308
D309
R303 100
D310
D311
D312
D313
D314
R304 220
D315
D316
D317
D318
R305 220
D319
D320
D321
D322
R306 220
S301 1
S302 2
S303 3
S304 4
S305 5
S306 6
S307 7
S308 8
S309 9
S310 0
S311
CLR
S312
S313
BHT
S314
S315
MEN
S316
CN10
CN9
COL6
COL5
COL4
COL3
COL2
COL1
KEY3
KEY2
KEY1
+12V
CLR
BHT
NUM
MENU
CN12
CN11
D301~310
SLV-31MC3
D311~314
SLV-31DC3
D315~322
SLV-31YC3
S301~310
DSG1011
S311~316
RSG-155
KEYB
DWS1101


AN
108
CN56
(➡ P38)
① V+12V
② DEPO
③ MAKE
CONT CN55
POSS DWX1110
R501 390
D501 GP1A14
C501 0.022
YF
CN60
(➡ P57)
TO POWB CN38
+14V
GND
+5V
RTSW
GND
CN2
① SEG a
② SEG b
③ SEG c
④ SEG d
⑤ SEG e
⑥ SEG f
⑦ SEG g
⑧ SEG dp
⑨ DRV6
⑩ DRV5
⑪ DRV4
⑫ DRV3
⑬ DRV2
⑭ DRV1
(➡ P38)
CONT CN1
CN59
CN39
R403 1K
Q404
C403 100/25
Q403
R404 1K
CN52
R405 2.2K
C402 0.022 YF
CN61
D401
+14V
C703 0.1/25
C704 1/50 NP
MENU MOTOR
M
DRV
C701 0.1/25
C702 1/50 NP
(➡ P37)
CONT CN51
+5V
MENU
RTSW
GND
COUNT
C401 47/6.3
Q401
Q402
100
R402
D402
R401 1K
Q401–Q404 MENU MOTOR DRIVER
CN85
+5V
COUNT
GND
CN86
IC801 GP1A30R
C801 0.022
R801 120
YF
IC801 COUNTER
CNTB DWX1132
ROTA DWX1109
Q401 UN4112
Q402 2SD1762
Q403 UN4212
Q404 2SB1185
D401, 402 1SR139-400
CN8
① COL6
② COL5
③ COL4
④ COL3
⑤ COL2
⑥ COL1
⑦ KEY3
⑧ KEY2
⑨ KEY1
⑩ CLR
⑪ BHT
⑫ NUM
⑬ MENU
CONT CN7
(➡ P38)

4.2 CD SECTION


PICKUP ASSEMBLY (PWY1009)
NEAR ← → FAR
OUT SIDE
IN SIDE
VR1 : LD POWER ADJ
VR1 3.3k
CN401
CN402
FREC
CN7
TP1
RF
TR.ER OUT
TR IN
GND
FO IN
FO.ER OUT
CN8
Q9 LD POWER
VR2 RF OFFSET
IC1 : RF AMP
VR7 TRACKING OFFSET
VR5 : TRACKING BALANCE
SHORT CIRCUIT WHEN AJUSTING VCO
VR6 : FOCUS OFFSET
VR3 FOCUS GAIN
VR4 : TRACKING GAIN
Q10 INVETER
IC2 : SERVO CONTROL
IC6 (1/2) FORCUS DRIVE
IC6 (2/2) TRACKING DRIVE
IC7 (1/2) CARRIAGE MOTOR DRIVE
Q11-Q13 RESET
VR8 VCO
Q7, Q8 PLL FILTER
SPINDLE MOTOR ASSEMBLY (DXX1361)
SLIDER MOTOR PXM1002
INSIDE SWITCH PSH1003
CN9
CN10
IC7 (2/2), IC8 SPINDLE MOTOR DRIVE
ANLG
DWX1155
IC201 : D/A CONVERTER
CN201
CN3
IC3 : DECODER
IC4 S-RAM
DB
AB

DEGT
IC1 : CXA1081S
IC2 : CXA1082AS
IC3 : CXD1135QZ
IC4 : CXK5816PN – 12L
IC5 : PD0068B
IC6 – IC8,IC10 : TA7256P
IC11 : M51953BL

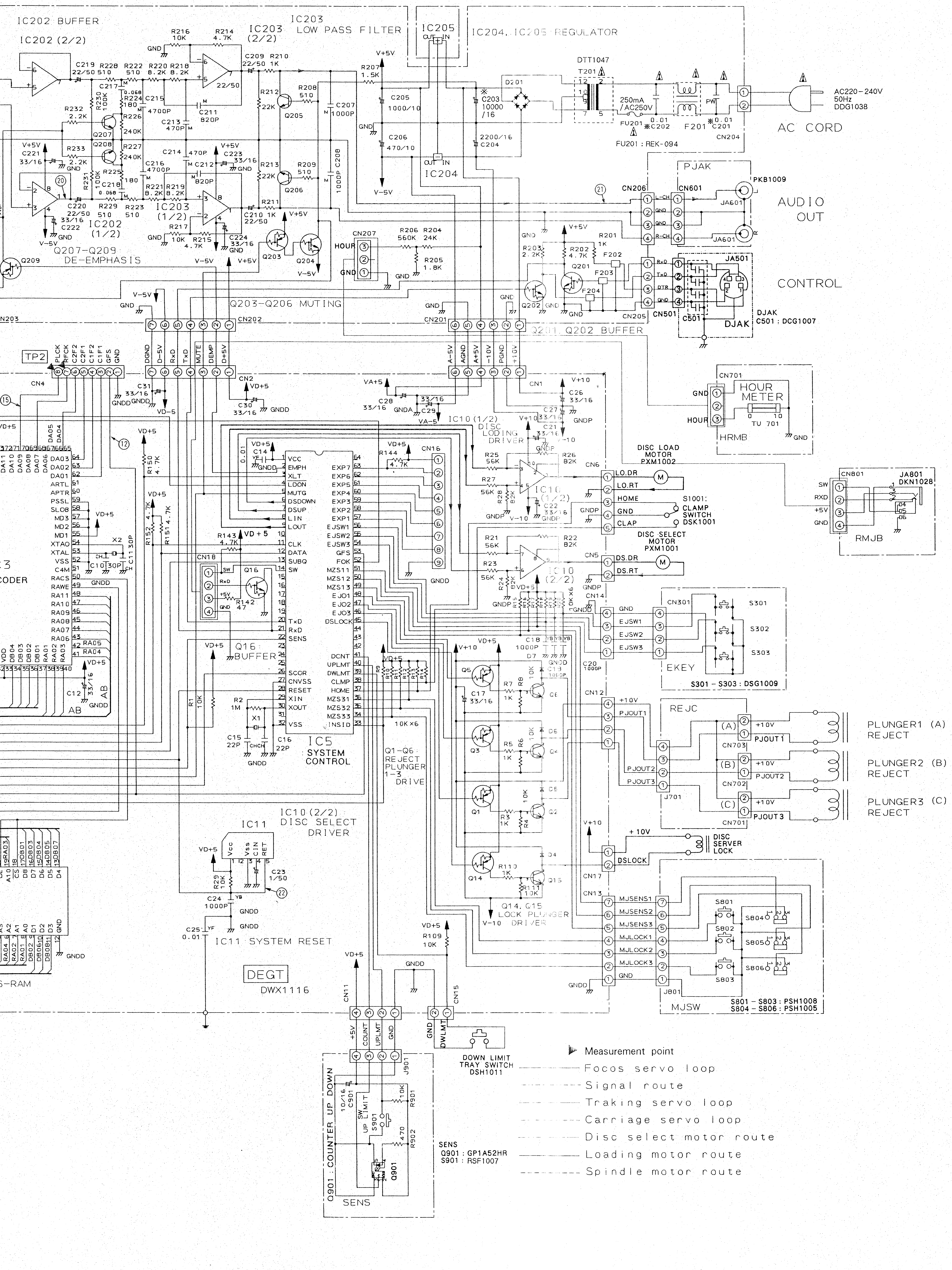
Q1,Q3,Q5,Q12,Q14 : DTA124ES
Q2,Q4,Q6,Q15 : 2SC2497
Q7,Q8,Q11 : 2SC1740S
Q9 : 2SA1399
Q10,Q16 : DTC124ES
Q13 : 2SA933S

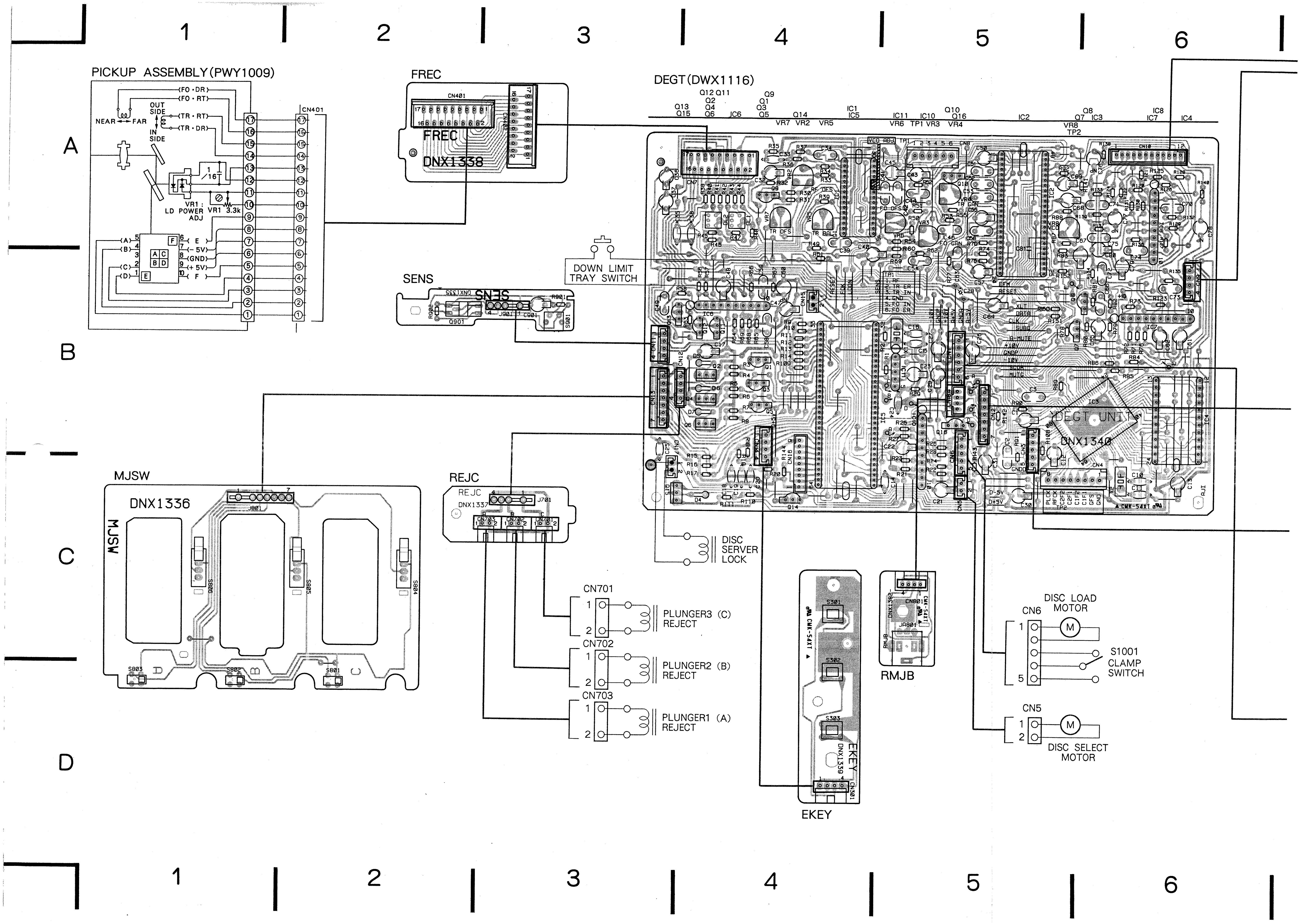
D4 – D7 : 1SS254
VR2 : VRTB6VS103
VR3 – VR7 : VRTB6VS223
VR8 : VRTB6VS102
X1 : DSS1010
X2 : PSS – 012
DL1,DL2 : PTF1012

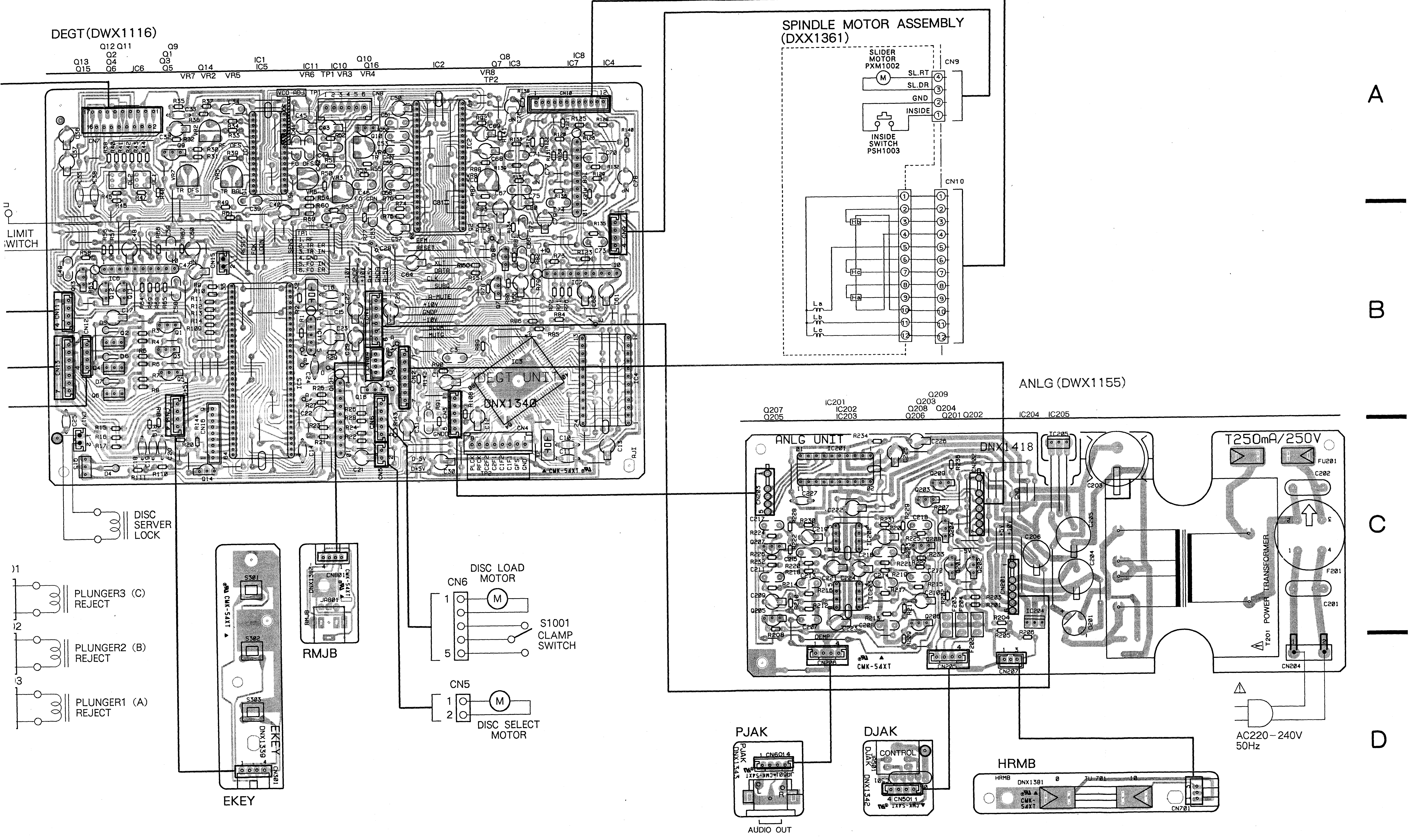
ANLG
IC201 : LC7881
IC202,IC203 : NJM4558D
IC204 : NJM79M05FA
IC205 : NJM7805FA

Q201,Q202,Q204 : DTC124ES
Q203,Q209 : DTA124ES
Q205,Q206 : 2SD1302
Q207,Q208 : 2SC1740S

D201 : 2W02 – 5008
C201,C202 : RCG – 009
F202 – F204 : VTH1001
L201 : VTL – 157
C203 : VCH1050

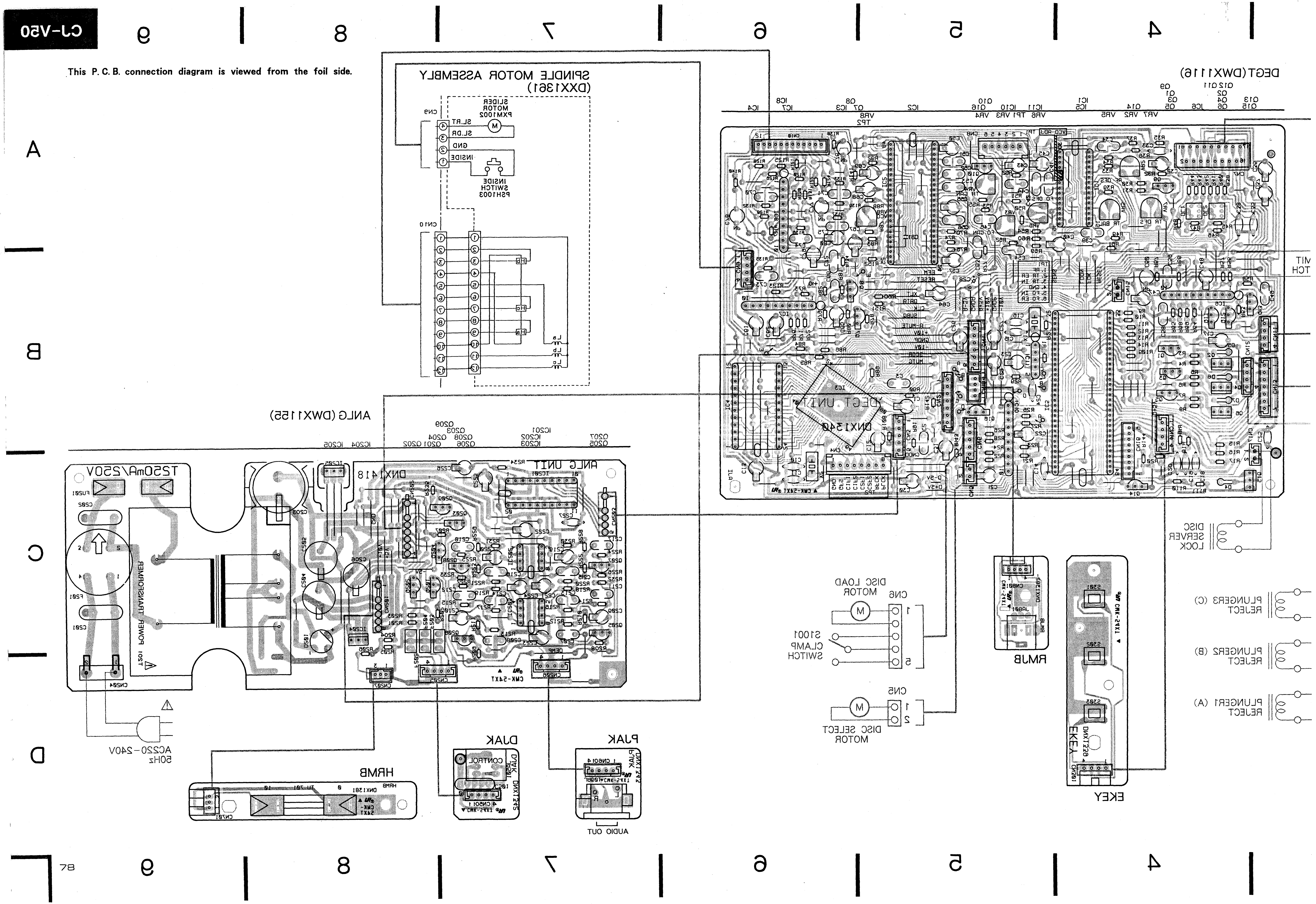

IC202 BUFFER
IC202 (2/2)
IC202 (1/2)
IC203 LOW PASS FILTER
IC203 (2/2)
IC203 (1/2)
Q207–Q209 DE-EMPHASIS
Q203–Q206 MUTING
IC205
IC204, IC205 REGULATOR
IC204
DTT1047
T201
D201
FU201
FU201 : REK-094
250mA /AC250V
F201
CN204
AC220–240V
50Hz
DDG1038
AC CORD
PJAK
CN206
CN601
PKB1009
JA601
AUDIO OUT
CN207
HOUR
JA501
CONTROL
CN205
CN501
C501
DJAK
DJAK C501 : DCG1007
Q201 Q202 BUFFER
Q201
Q202
CN202
CN201
CN203
TP2
CN4
CN2
CN1
PLCK
RFCK
C2F2
C2F1
C1F2
C1F1
GFS
GND
DGND
D-5V
RxD
TxD
MUTE
DEMP
D+5V
A-5V
AGND
A+5V
-10V
PGND
+10V
CN701
HOUR METER
TU 701
HRMB
IC10 (1/2) DISC LODING DRIVER
IC10 (2/2)
CN6
LO.DR
LO.RT
HOME
GND
CLAP
DISC LOAD MOTOR PXM1002
S1001: CLAMP SWITCH DSK1001
DISC SELECT MOTOR PXM1001
CN5
DS.DR
DS.RT
CN801
JA801 DKN1028
SW
RXD
+5V
RMJB
CN16
CN18
Q16
Q16 BUFFER
VCC
EMPH
XLT
LDON
MUTG
DSDOWN
DSUP
LIN
LOUT
CLK
DATA
SUBQ
SW
TxD
RxD
SENS
SCOR
CNVSS
RESET
XIN
XOUT
VSS
EXP7
EXP6
EXP5
EXP4
EXP3
EXP2
EXP1
EJSW1
EJSW2
EJSW3
GFS
FOK
MZS11
MZS12
MZS13
EJO1
EJO2
EJO3
DSLOCK
DCNT
UPLMT
DWLMT
CLMP
HOME
MZS31
MZS32
MZS33
INSID
IC5 SYSTEM CONTROL
X1
X2
10K×6
Q1–Q6 REJECT PLUNGER 1–3 DRIVE
Q14, Q15 LOCK PLUNGER DRIVER
CN14
CN301
EJSW1
EJSW2
EJSW3
S301
S302
S303
EKEY
S301 – S303 : DSG1009
CN12
REJC
+10V
PJOUT1
PJOUT2
PJOUT3
CN703
CN702
CN701
J701
(A)
(B)
(C)
PLUNGER1 (A) REJECT
PLUNGER2 (B) REJECT
PLUNGER3 (C) REJECT
DISC SERVER LOCK
DSLOCK
CN17
CN13
MJSENS1
MJSENS2
MJSENS3
MJLOCK1
MJLOCK2
MJLOCK3
S801
S802
S803
S804
S805
S806
J801
MJSW
S801 – S803 : PSH1008
S804 – S806 : PSH1005
IC11
IC11 SYSTEM RESET
IC10 (2/2) DISC SELECT DRIVER
DEGT
DWX1116
CN11
CN15
+5V
COUNT
UPLMT
DWLMT
DOWN LIMIT TRAY SWITCH DSH1011
J901
Q901: COUNTER UP DOWN
SW UP LIMIT
S901
Q901
SENS
SENS
Q901 : GP1A52HR
S901 : RSF1007
AB
S-RAM
CODER
Measurement point
Focos servo loop
Signal route
Traking servo loop
Carriage servo loop
Disc select motor route
Loading motor route
Spindle motor route
6
7
8
9
B
C
D
E
F

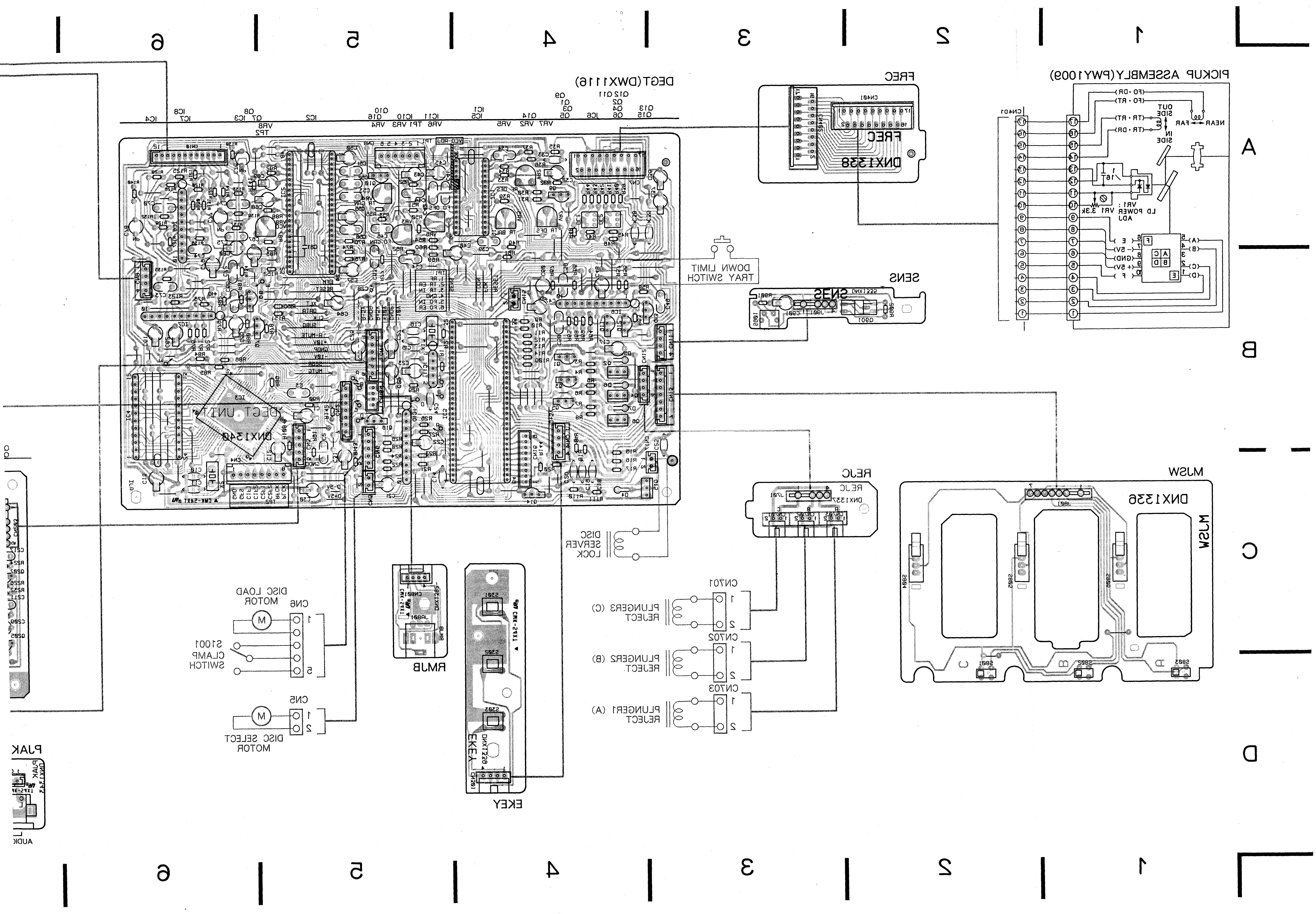

1
2
3
4
5
6
A
B
C
D
PICKUP ASSEMBLY (PWY1009)
(FO・DR)
(FO・RT)
OUT SIDE
NEAR ← → FAR
IN SIDE
(TR・RT)
(TR・DR)
1/16
VR1 : LD POWER ADJ
VR1 3.3k
(A)
(B)
(C)
(D)
E
F
(− 5V)
(GND)
(+ 5V)
CN401
FREC
CN401
CN402
DNX1338
SENS
DNX1335
Q901
J901
C901
R901
R902
S901
DOWN LIMIT TRAY SWITCH
DEGT (DWX1116)
Q13 Q15
Q12 Q11 Q2 Q4 Q6
JC6
Q9 Q1 Q3 Q5
Q14
VR7 VR2 VR5
IC1 IC5
IC11 VR6
IC10 TP1 VR3
Q10 Q16 VR4
IC2
VR8 TP2
Q8 Q7 IC3
IC8 IC7
IC4
CN7
CN8
CN10
CN9
CN11
CN12
CN13
CN14
CN15
CN16
CN2
CN3
CN4
CN5
CN6
VCO ADJ
TR OFS
TR BAL
FO OFS
TR GAN
FO GAN
DEGT UNIT
DNX1340
D-5V
D+5V
CMK-54X1
AJI
DISC SERVER LOCK
MJSW
DNX1336
J801
S801
S802
S803
S804
S805
S806
REJC
DNX1337
J701
CN701
CN702
CN703
CN701
PLUNGER3 (C) REJECT
CN702
PLUNGER2 (B) REJECT
CN703
PLUNGER1 (A) REJECT
EKEY
DNX1339
S301
S302
S303
CN301
RMJB
DNX1382
CN801
JA801
CN6
DISC LOAD MOTOR
M
S1001 CLAMP SWITCH
CN5
DISC SELECT MOTOR
1
2
3
4
5
6


DEGT (DWX1116)
DEGT UNIT
DNX1340
SPINDLE MOTOR ASSEMBLY (DXX1361)
SLIDER MOTOR PXM1002
SL.RT
SL.DR
GND
INSIDE
INSIDE SWITCH PSH1003
CN9
CN10
LIMIT SWITCH
DISC SERVER LOCK
PLUNGER3 (C) REJECT
PLUNGER2 (B) REJECT
PLUNGER1 (A) REJECT
EKEY
DNX1339
RMJB
DISC LOAD MOTOR
CN6
S1001 CLAMP SWITCH
CN5
DISC SELECT MOTOR
ANLG (DWX1155)
ANLG UNIT
DNX1418
T250mA/250V
FU201
POWER TRANSFORMER
T201
CN204
AC220−240V 50Hz
PJAK
DNX1343
AUDIO OUT
DJAK
DNX1342
CONTROL
HRMB
DNX1381
CN701
CMK-54XT

A B C D

This P. C. B. connection diagram is viewed from the foil side.

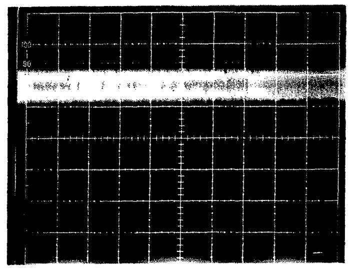

9
8
7
6
5
4
A
B
C
D
SPINDLE MOTOR ASSEMBLY
(DXX1361)
SLIDER MOTOR PXM1002
INSIDE SWITCH PSH1003
CN9
CN10
SL.RT
SL.DR
GND
INSIDE
DEGT (DWX1116)
DEGT UNIT
DNX1340
ANLG (DWX1155)
ANLG UNIT
DNX1418
T250mA/250V
POWER TRANSFORMER
AC220-240V
50Hz
HRMB
DJAK
PJAK
AUDIO OUT
DISC LOAD MOTOR
CN6
S1001
CLAMP SWITCH
DISC SELECT MOTOR
CN5
RMJB
EKEY
DISC SERVER LOCK
PLUNGER3 (C)
REJECT
PLUNGER2 (B)
REJECT
PLUNGER1 (A)
REJECT


1
2
3
4
5
6
A
B
C
D
PICKUP ASSEMBLY(PWY1009)
FREC
DNX1338
DEGT(DWX1116)
DEGT UNIT
DNX1340
SENS
DOWN LIMIT
TRAY SWITCH
LD POWER ADJ
VR1 3.3k
OUT SIDE
IN SIDE
FAR
NEAR
REJC
MJSW
DNX1336
DISC SERVER LOCK
CN701
PLUNGER3 (C) REJECT
CN702
PLUNGER2 (B) REJECT
CN703
PLUNGER1 (A) REJECT
EKEY
RMJB
CN6
DISC LOAD MOTOR
S1001
CLAMP SWITCH
CN5
DISC SELECT MOTOR
PLAK
AUDIO

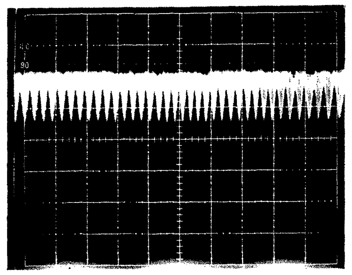
Wave Forms

NOTE : The encircled numbers denote measuring points in the schematic diagram.

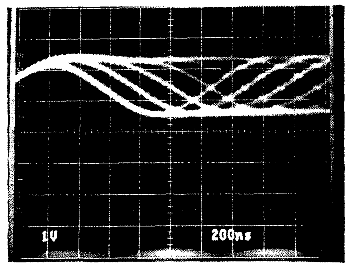
① CN7-5 Pin : PLAY MODE
50mV/div 5msec/div



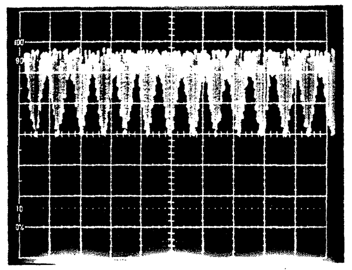
① CN7-5 Pin : SEARCH MODE
50mV/div 5msec/div



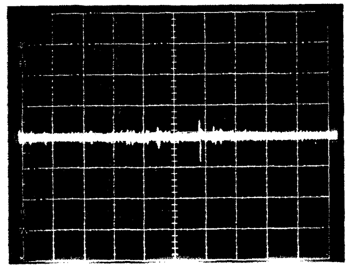
② TP1-1 Pin : PLAY MODE
1V/div 200nsec/div



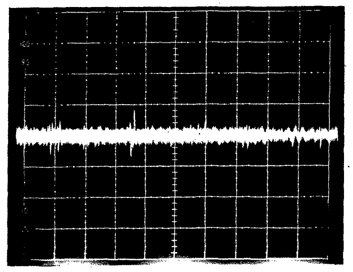
② TP1-1 Pin : SEARCH MODE
500mV/div 100μsec/div



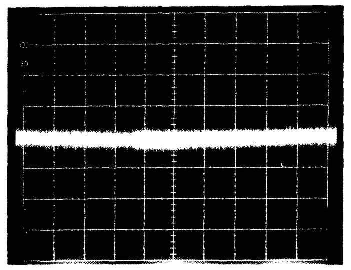
③ TP1-6 Pin : PLAY MODE
500mV/div 10msec/div



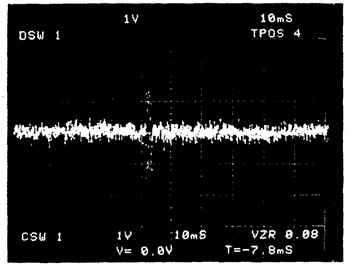
③ TP1-6 Pin : SEARCH MODE
500mV/div 10msec/div



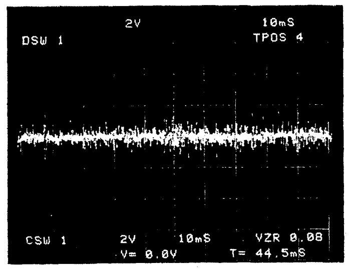
④ TP1-2 Pin : PLAY MODE
1V/div 10msec/div



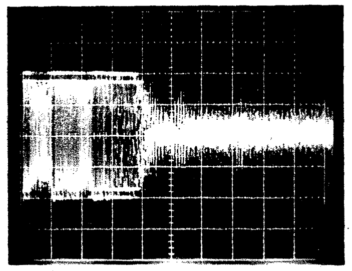
④ TP1-2 Pin : SEARCH MODE
1V/div 10msec/div



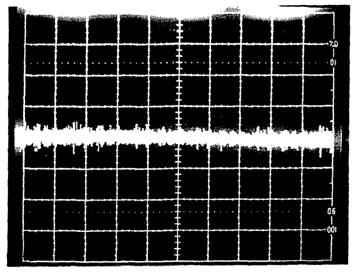
⑤ IC6-2 Pin : PLAY MODE
2V/div 10msec/div



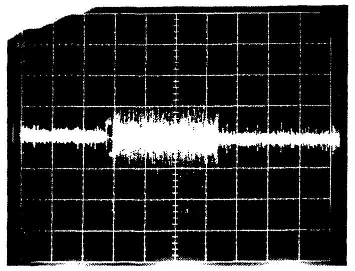
⑤ IC6-2 Pin : SEARCH MODE
2V/div 10msec/div



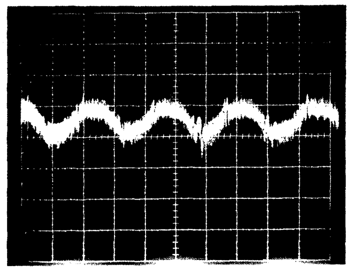
⑥ IC6-8 Pin : PLAY MODE
2V/div 10msec/div



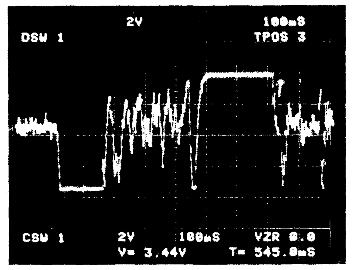
⑥ IC6-8 Pin : SEARCH MODE
2V/div 10msec/div



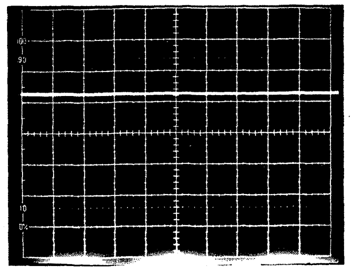
⑦ IC2-45 Pin : PLAY MODE
2V/div 10msec/div



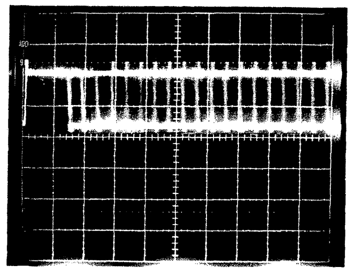
⑦ IC2-45 Pin : SEARCH MODE
2V/div 10msec/div



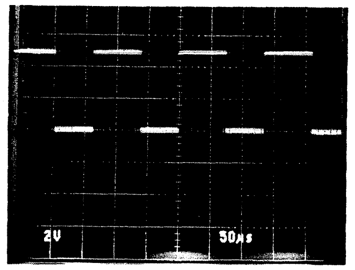
⑧ IC2-33, 34 Pin : PLAY MODE
2V/div 10msec/div



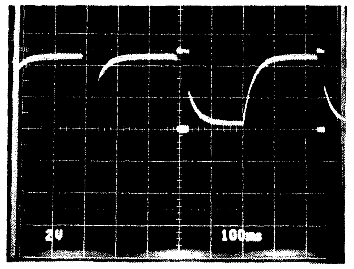
⑨ IC1-27 Pin : PLAY MODE
2V/div 500nsec/div



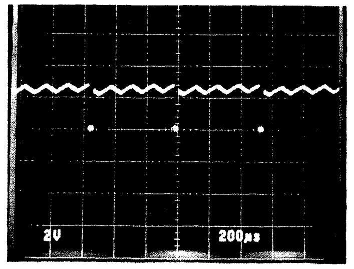
⑩ IC3-4 Pin : PLAY MODE
2V/div 50μsec/div



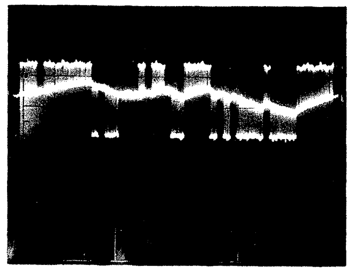
⑩ IC3-4 Pin : SEARCH MODE
2V/div 100msec/div



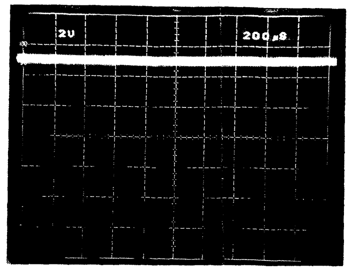
⑪ IC3-3 Pin : PLAY MODE
2V/div 200μsec/div



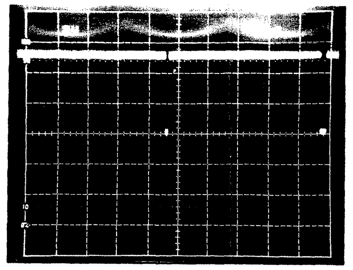
⑪ IC3-3 Pin : SEARCH MODE
2V/div 10msec/div



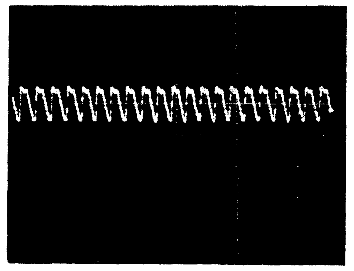
⑫ TP2-2 Pin : PLAY MODE
2V/div 200μsec/div



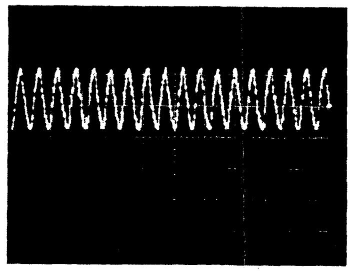
⑫ TP2-2 Pin : SEARCH MODE
2V/div 200μsec/div



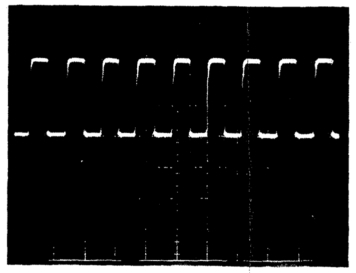
⑬ IC2-38 Pin : PLAY MODE
2V/div 200nsec/div



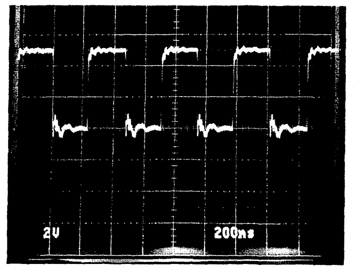
⑭ IC3-8 Pin : PLAY MODE
2V/div 200nsec/div



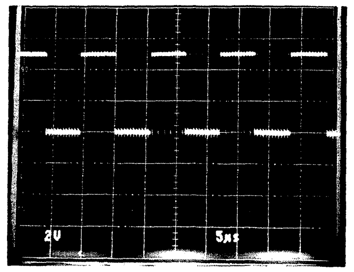
⑮ TP2-8 Pin : PLAY MODE
2V/div 200nsec/div



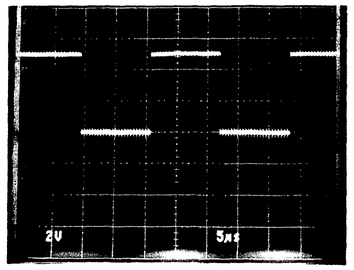
⑯ IC3-76 Pin : STOP MODE
2V/div 200nsec/div



⑰ IC3-79 Pin : STOP MODE
2V/div 5μsec/div

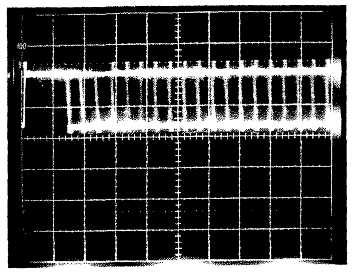


⑱ IC3-80 Pin : STOP MODE
2V/div 5μsec/div

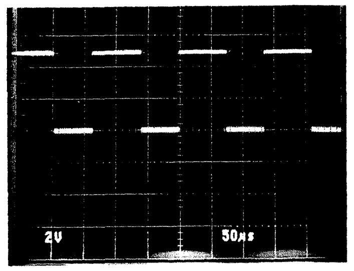


points in the

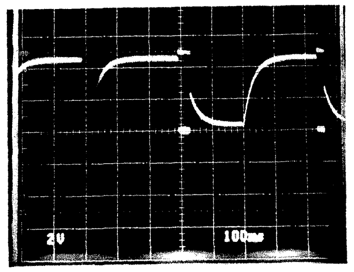
⑨ IC1-27 Pin : PLAY MODE
2V/div 500nsec/div



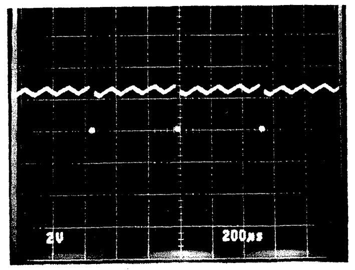
⑩ IC3-4 Pin : PLAY MODE
2V/div 50µsec/div



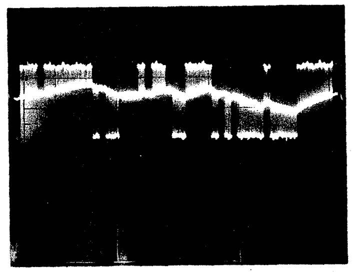
⑩ IC3-4 Pin : SEARCH MODE
2V/div 100msec/div



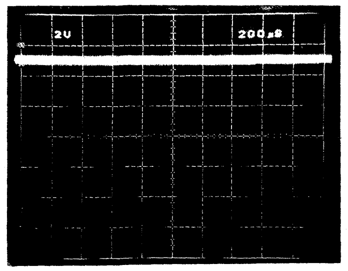
⑪ IC3-3 Pin : PLAY MODE
2V/div 200µsec/div



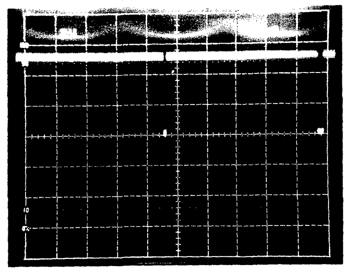
⑪ IC3-3 Pin : SEARCH MODE
2V/div 10msec/div



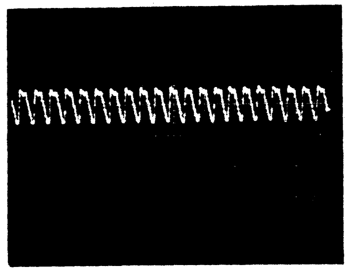
⑫ TP2-2 Pin : PLAY MODE
2V/div 200µsec/div



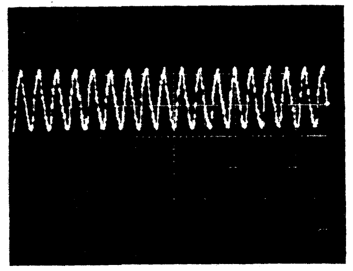
⑫ TP2-2 Pin : SEARCH MODE
2V/div 200µsec/div



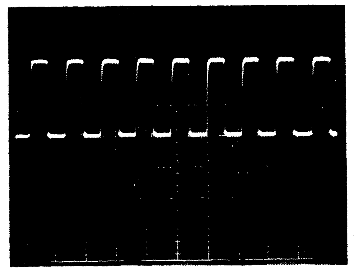
⑬ IC2-38 Pin : PLAY MODE
2V/div 200nsec/div



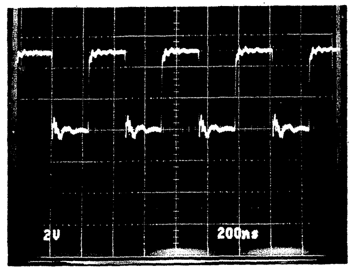
⑭ IC3-8 Pin : PLAY MODE
2V/div 200nsec/div



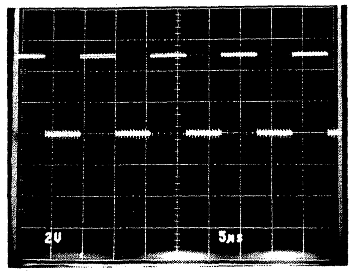
⑮ TP2-8 Pin : PLAY MODE
2V/div 200nsec/div



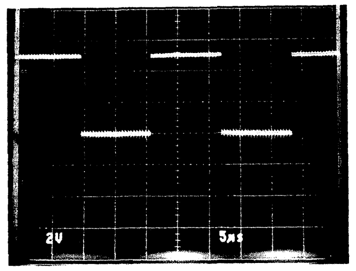
⑯ IC3-76 Pin : STOP MODE
2V/div 200nsec/div



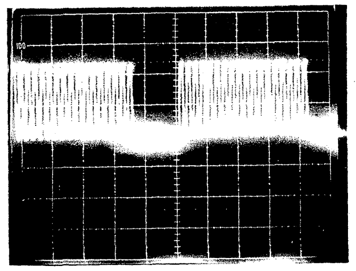
⑰ IC3-79 Pin : STOP MODE
2V/div 5µsec/div



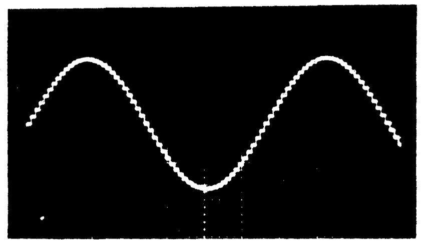
⑱ IC3-80 Pin : STOP MODE
2V/div 5µsec/div



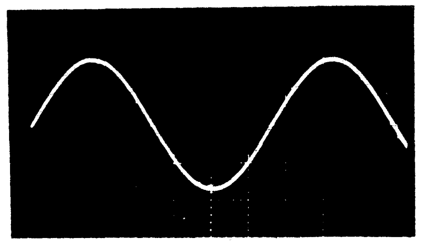
⑲ IC201-9 Pin : PLAY MODE
2V/div 0.5µsec/div



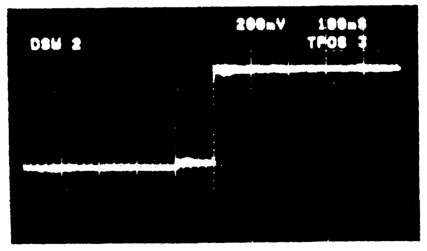
⑳ IC202-1 Pin : PLAY MODE
2V/div 50µsec/div



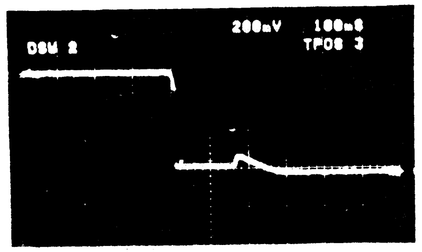
㉑ OUTPUT Lch : PLAY MODE
2V/div 50µsec/div



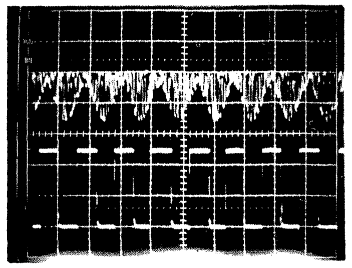
㉒ IC11-5 Pin : POWER ON
2V/div 100msec/div



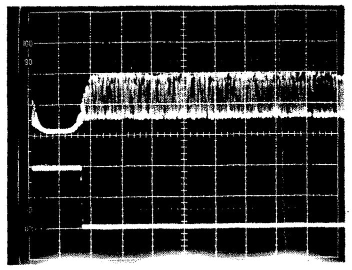
㉒ IC11-5 Pin : POWER OFF
2V/div 100msec/div



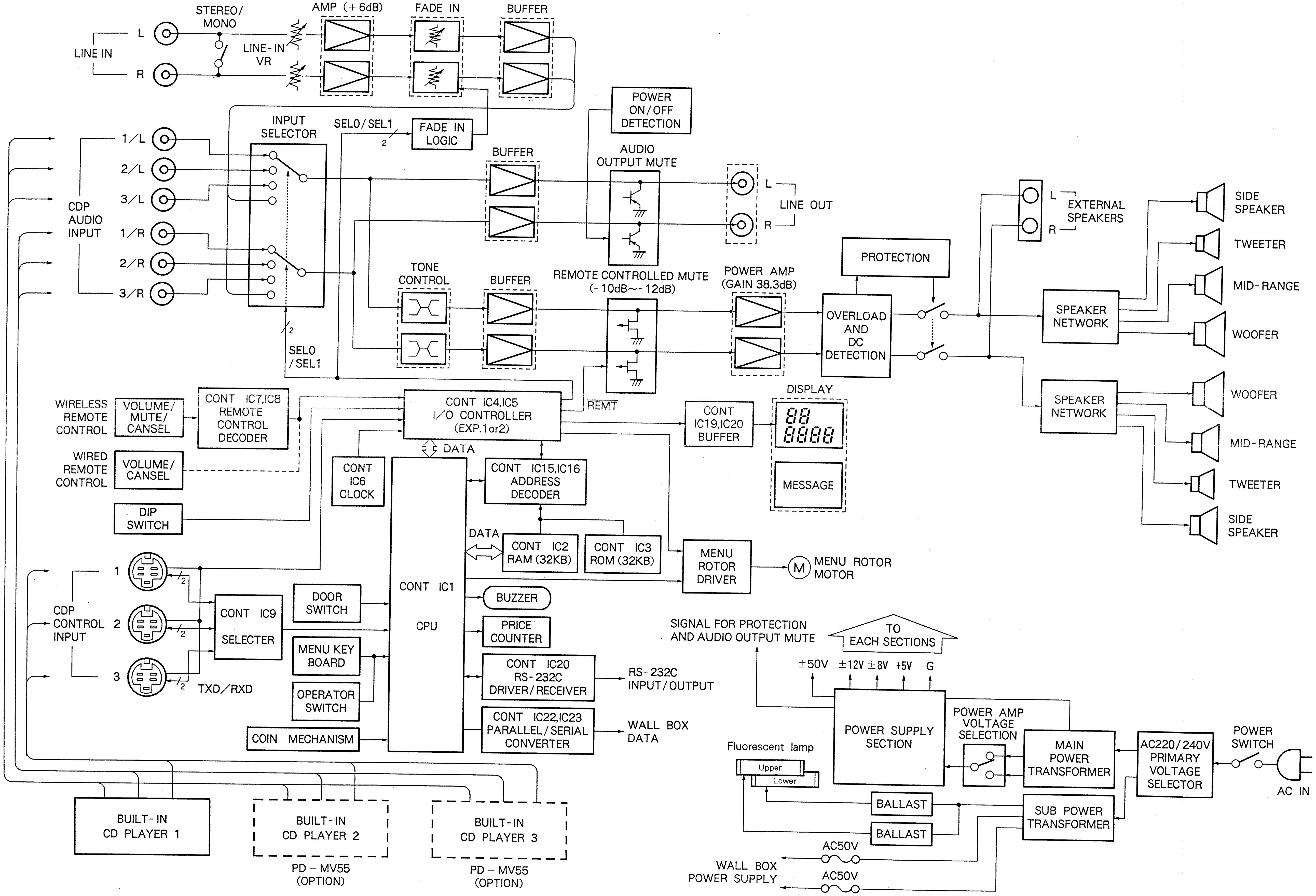
㉓ IC1-22 Pin : TRACKING OPEN
0.1msec/div
Upper TP1-1 Pin : 1V/div
Lower IC1-22 Pin : 2V/div



㉔ IC1-21 Pin : DFCT 0.5msec/div
Upper TP1-1 Pin : 1V/div
Lower IC1-21 Pin : 5V/div



5. BLOCK DIAGRAM


LINE IN
L
R
STEREO/
MONO
LINE-IN
VR
AMP (+6dB)
FADE IN
BUFFER
POWER
ON/OFF
DETECTION
INPUT
SELECTOR
SEL0/SEL1
FADE IN
LOGIC
BUFFER
AUDIO
OUTPUT MUTE
CDP
AUDIO
INPUT
1/L
2/L
3/L
1/R
2/R
3/R
LINE OUT
L
R
EXTERNAL
SPEAKERS
L
R
SIDE
SPEAKER
TWEETER
MID-RANGE
WOOFER
PROTECTION
TONE
CONTROL
BUFFER
REMOTE CONTROLLED MUTE
(-10dB~-12dB)
POWER AMP
(GAIN 38.3dB)
OVERLOAD
AND
DC
DETECTION
SPEAKER
NETWORK
SPEAKER
NETWORK
WOOFER
MID-RANGE
TWEETER
SIDE
SPEAKER
SEL0
/SEL1
2
WIRELESS
REMOTE
CONTROL
VOLUME/
MUTE/
CANSEL
CONT IC7,IC8
REMOTE
CONTROL
DECODER
CONT IC4,IC5
I/O CONTROLLER
(EXP.1or2)
REMT
CONT
IC19,IC20
BUFFER
DISPLAY
88
8888
MESSAGE
WIRED
REMOTE
CONTROL
VOLUME/
CANSEL
DATA
CONT
IC6
CLOCK
CONT IC15,IC16
ADDRESS
DECODER
DIP
SWITCH
DATA
CONT IC2
RAM (32KB)
CONT IC3
ROM (32KB)
MENU
ROTOR
DRIVER
M
MENU ROTOR
MOTOR
CONT IC1
CPU
BUZZER
PRICE
COUNTER
CDP
CONTROL
INPUT
1
2
3
CONT IC9
SELECTER
DOOR
SWITCH
MENU KEY
BOARD
OPERATOR
SWITCH
TXD/RXD
COIN MECHANISM
CONT IC20
RS-232C
DRIVER/RECEIVER
RS-232C
INPUT/OUTPUT
CONT IC22,IC23
PARALLEL/SERIAL
CONVERTER
WALL BOX
DATA
SIGNAL FOR PROTECTION
AND AUDIO OUTPUT MUTE
TO
EACH SECTIONS
±50V
±12V
±8V
+5V
G
POWER SUPPLY
SECTION
POWER AMP
VOLTAGE
SELECTION
MAIN
POWER
TRANSFORMER
AC220/240V
PRIMARY
VOLTAGE
SELECTOR
POWER
SWITCH
AC IN
Fluorescent lamp
Upper
Lower
BALLAST
BALLAST
SUB POWER
TRANSFORMER
AC50V
AC50V
WALL BOX
POWER SUPPLY
BUILT-IN
CD PLAYER 1
BUILT-IN
CD PLAYER 2
BUILT-IN
CD PLAYER 3
PD-MV55
(OPTION)
PD-MV55
(OPTION)

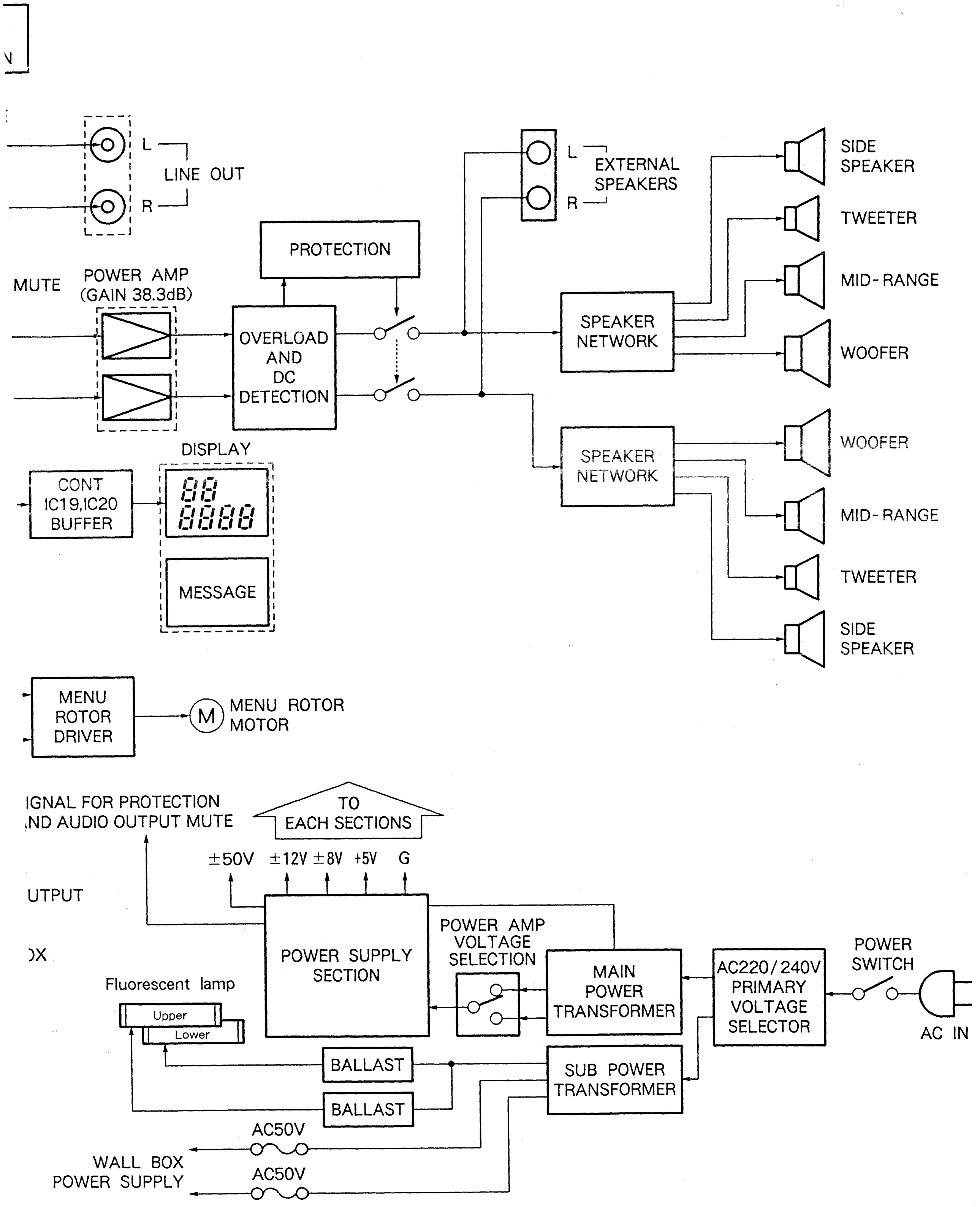
6. P. C.

MAIN SEC

NOTES :
- Parts without
- Parts marked
- The ⚠ mark fo replacing, be s
- When ordering

Ex.1 When th
J = 5%,
560 Ω→
47k Ω→
0.5 Ω→0
1 Ω→0
Ex.2 When th
5.62k Ω-

Mark	NO	De
CONT		
SEMICONDU		
	IC1	
	IC10	IC
	IC11	SY
	IC12, 13	
	IC14, 15	
	IC16	
	IC17	LO
	IC19	TR
	IC2	CM
	IC20	TR
	IC22	IC
	IC23	
	IC24	LO
	IC26	LO
	IC3	IC
	IC4, 5	
	IC6	IC
	IC7	IC
	IC8	
	IC9	MU
	Q1	TR
	Q2, 3	
	Q36	TR
	Q37	TR
	Q38, 39	
	Q4	TR
	Q43-46	
	Q48	TR
	Q49	TR
	Q5	TR
	Q50-57	
	Q6	TR
	Q7	TR
	Q84-88	
	Q89, 90	



L
LINE OUT
R
MUTE
POWER AMP
(GAIN 38.3dB)
PROTECTION
OVERLOAD AND DC DETECTION
L
EXTERNAL SPEAKERS
R
SPEAKER NETWORK
SPEAKER NETWORK
SIDE SPEAKER
TWEETER
MID-RANGE
WOOFER
WOOFER
MID-RANGE
TWEETER
SIDE SPEAKER
DISPLAY
CONT IC19,IC20 BUFFER
88
8888
MESSAGE
MENU ROTOR DRIVER
M
MENU ROTOR MOTOR
IGNAL FOR PROTECTION
.ND AUDIO OUTPUT MUTE
TO EACH SECTIONS
±50V
±12V
±8V
+5V
G
UTPUT
)X
POWER SUPPLY SECTION
POWER AMP VOLTAGE SELECTION
MAIN POWER TRANSFORMER
AC220/240V PRIMARY VOLTAGE SELECTOR
POWER SWITCH
AC IN
Fluorescent lamp
Upper
Lower
BALLAST
BALLAST
SUB POWER TRANSFORMER
AC50V
AC50V
WALL BOX POWER SUPPLY

6. P. C. B's PARTS LIST

MAIN SECTION

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5 %, and K = 10 %).

560 Ω → 56 × 10^1 → 561 ······ RD1/4PS$\boxed{5}\boxed{6}\boxed{1}$J
47k Ω → 47 × 10^3 → 473 ······ RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
0.5 Ω → 0R5 ······ RN2H$\boxed{0}\boxed{R}\boxed{5}$K
1 Ω → 010 ······ RS1P$\boxed{0}\boxed{1}\boxed{0}$K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 ······ RN1/4SR$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

CONT

SEMICONDUCTORS

Mark	NO	Description	Part NO.
	IC1		M50747SP
	IC10	IC	MC145406P
	IC11	SYSTEM PRESET IC	M5295L
	IC12, 13	LOGIC IC	TC74HC14AP
	IC14, 15	LOGIC IC	TC74HC00AP
	IC16		TC74HC4002AP
	IC17	LOGIC IC	SN74LS05N
	IC19	TRANSISTOR ARRAY	M54584P
	IC2	CMOS S-RAM	HM62256LP-12
	IC20	TRANSISTOR ARRAY	M54564P
	IC22	IC(RS-422A IC)	SN75176BP
	IC23		HD64941
	IC24	LOGIC IC	TC74HC14AP
	IC26	LOGIC IC	TC74HC08AP
	IC3	IC	PD5157A
	IC4, 5	IC	CXD1095Q
	IC6	IC(REAL TIME CLOCK)	TC8250P
	IC7	IC	PD5027
	IC8		TC74HC574AP
	IC9	MULTIPLEXOR	TC74HC4052AP
	Q1	TRANSISTOR	2SC3246
	Q2, 3	TRANSISTOR	2SC1740S
	Q36	TRANSISTOR	2SC1740S
	Q37	TRANSISTOR	2SA1015
	Q38, 39	TRANSISTOR	2SC1740S
	Q4	TRANSISTOR	DTC124ES
	Q43-46	TRANSISTOR	DTC124ES
	Q48	TRANSISTOR	DTA124ES
	Q49	TRANSISTOR	DTC124ES
	Q5	TRANSISTOR	2SA1015
	Q50-57	TRANSISTOR	DTC124ES
	Q6	TRANSISTOR	2SC1740S
	Q7	TRANSISTOR	DTA124ES
	Q84-88	TRANSISTOR	DTC124ES
	Q89, 90	TRANSISTOR	DTA124ES
	Q91-96		DTC114ES
	D1	DIODE	1SS254
	D17-19	DIODE	1SS254
	D2, 20	DIODE	1SS254
	D3, 4	DIODE	1SS254
	D5-9	ZENER DIODE	MTZ5. 1B

COILS AND FILTERS

Mark	NO	Description	Part NO.
	L1	RADIAL INDUCTOR	LFA010K
	L2, 3	AXIAL INDUCTOR	LAU010K
	F1		VTH1001
	F10-19		VTH1001
	F2		VTH1001
	F20-23		VTH1001
	F25, 28		VTH1001
	F3		VTH1001
	F30-34		VTH1001
	F4-9		VTH1001

CAPACITORS

Mark	NO	Description	Part NO.
	C1	CERAMIC CAPACITOR	CKCYF103Z50
	C10	ELECTR. CAPACITOR	CEAS330M16
	C100, 101	CERAMIC CAPACITOR	CKCYF102Z50
	C102-107	CERAMIC CAPACITOR	CKCYF103Z50
	C108	CAPACITOR ARRAY	DCG1004
	C109	CAPACITOR ARRAY	DCG1005
	C11	CERAMIC CAPACITOR	CKCYF103Z50
	C110	CAPACITOR ARRAY	DCG1005
	C111, 112	CERAMIC CAPACITOR	CKCYF103Z50
	C113	CERAMIC CAPACITOR	CKCYF102Z50
	C114	CERAMIC CAPACITOR	CKCYF103Z50
	C115	MYLOR FILM CAPACITOR	CQMA223J50
	C116, 12	ELECTR. CAPACITOR	CEAS330M16
	C13-16	CERAMIC CAPACITOR	CKCYF103Z50
	C17	ELECTR. CAPACITOR	CEAS330M16
	C18	ELECTR. CAPACITOR	CEAS3R3M50
	C19	CERAMIC CAPACITOR	CKCYF103Z50
	C2	ELECTR. CAPACITOR	CEAS330M16
	C20	CERAMIC CAPACITOR	CKCYF103Z50
	C21	ELECTROLYTIC CAPACIT	CEAS332M6R3

Mark	No.	Description	Part No.
	C22-26	CERAMIC CAPACITOR	CKCYF103Z50
	C27	ELECTR. CAPACITOR	CEAS330M16
	C28	CERAMIC CAPACITOR	CKCYF103Z50
	C29	ELECTR. CAPACITOR	CEAS330M16
	C3, 30	CERAMIC CAPACITOR	CKCYF103Z50
	C31, 32	CERAMIC CAPACITOR	CCCCH150J50
	C33	CERAMIC CAPACITOR	CKCYF103Z50
	C34	ELECTR. CAPACITOR	CEAS330M16
	C35	CERAMIC CAPACITOR	CKCYF103Z50
	C36	ELECTR. CAPACITOR	CEAS330M16
	C37, 38	CERAMIC CAPACITOR	CCCSL151J50
	C39	CERAMIC CAPACITOR	CKCYF103Z50
	C4	ELECTR. CAPACITOR	CEAS330M16
	C40	CERAMIC CAPACITOR	CKCYF103Z50
	C41	ELECTR. CAPACITOR	CEAS330M16
	C42	CERAMIC CAPACITOR	CKCYF103Z50
	C43	ELECTR. CAPACITOR	CEAS330M16
	C44	CERAMIC CAPACITOR	CKCYF103Z50
	C45	ELECTR. CAPACITOR	CEAS330M16
	C46	CERAMIC CAPACITOR	CKCYF103Z50
	C47	ELECTR. CAPACITOR	CEAS330M16
	C48	CERAMIC CAPACITOR	CKCYF103Z50
	C49	ELECTR. CAPACITOR	CEAS330M16
	C5	CERAMIC CAPACITOR	CKCYF103Z50
	C50	1F CAPACITOR	DCH1004
	C51	ELECTR. CAPACITOR	CEAS4R7M50
	C52	CERAMIC CAPACITOR	CKCYF103Z50
	C53	ELECTR. CAPACITOR	CEAS330M16
	C54, 55	CERAMIC CAPACITOR	CKCYF103Z50
	C56	CERAMIC CAPACITOR	CKCYF102Z50
	C57	CAPACITOR ARRAY	DCG1005
	C58	CAPACITOR ARRAY	DCG1004
	C59	CERAMIC CAPACITOR	CKCYF103Z50
	C6, 60	ELECTR. CAPACITOR	CEAS330M16
	C61	CAPACITOR ARRAY	DCG1005
	C62	CAPACITOR ARRAY	DCG1004
	C63, 64	CERAMIC CAPACITOR	CKCYF103Z50
	C65, 66	CERAMIC CAPACITOR	CCCCH100D50
	C67	CERAMIC CAPACITOR	CKCYF103Z50
	C68, 69	ELECTR. CAPACITOR	CEAS330M16
	C7	CERAMIC CAPACITOR	CKCYF103Z50
	C70	CAPACITOR ARRAY	DCG1004
	C71	CAPACITOR ARRAY	DCG1005
	C72	CERAMIC CAPACITOR	CKCYF103Z50
	C73	ELECTR. CAPACITOR	CEAS330M16
	C74	CAPACITOR ARRAY	DCG1006
	C75	ELECTR. CAPACITOR	CEAS330M16
	C76	CERAMIC CAPACITOR	CKCYF103Z50
	C77	ELECTR. CAPACITOR	CEAS471M10
	C78	ELECTR. CAPACITOR	CEAS330M16
	C79	CERAMIC CAPACITOR	CKCYF103Z50
	C8, 80	ELECTR. CAPACITOR	CEAS330M16
	C81, 82	CERAMIC CAPACITOR	CKCYF103Z50
	C83	ELECTR. CAPACITOR	CEAS330M16
	C84-87	CERAMIC CAPACITOR	CKCYF103Z50
	C88	ELECTR. CAPACITOR	CEAS330M16
	C89, 9	CERAMIC CAPACITOR	CKCYF103Z50
	C90	ELECTR. CAPACITOR	CEAS330M16
	C91	CERAMIC CAPACITOR	CKCYF103Z50
	C92	ELECTR. CAPACITOR	CEAS330M16
	C93	CERAMIC CAPACITOR	CKCYF103Z50
	C94	ELECTR. CAPACITOR	CEAS330M16
	C95-98	CERAMIC CAPACITOR	CKCYF103Z50
	C99	CERAMIC CAPACITOR	CKCYF102Z50

RESISTORS

	R113	RESISTOR ARRAY (10K)	RA7S103J
	R118	RESISTOR ARRAY (10K)	RA5S103J
	R13, 120	RESISTOR ARRAY (10K)	RA8S103J
	R23	RESISTOR ARRAY (4.7K)	RA8S472J
	R59	RESISTOR ARRAY (10K)	RA8S103J
		Other resistors	RD1/6PM□□□J

OTHERS

	X1	CRYSTAL RESONATOR	DSS1001
	X2	CERAMIC RESONATOR	VSS-041
	X3	CRYSTAL RESONATOR	DSS1014
		PIEZOELECTRIC BUZZER	DPX1002
		IC SOCKET(28-P)	VKH-027

◉PAMP (DWH1007)

SEMICONDUCTORS

	IC1	AUDIO IC	STK4231-2
	Q1	TRANSISTOR	2SC1740S
	Q12, 13	P-FET	2SJ103
	Q2	TRANSISTOR	2SC1740S
	Q3	TRANSISTOR	2SC1775
	Q4	TRANSISTOR	2SA933S
	Q5	TRANSISTOR	2SC1740S
	Q6	TRANSISTOR	2SA1283
	Q7, 8	TRANSISTOR	2SA970
	D11	DIODE	1SR35-100AVL
	D2	DIODE	1SS254
	D3	DIODE	1SS142
	D5	DIODE	1SR35-100AVL
	D7	ZENER DIODE	MTZJ6.8B
	D8, 9	DIODE	1SR35-100AVL

RELAY

	RY1		RSR1014

COILS

	L1, 2	COIL	DTH1116

CAPACITORS

	C1	CERAMIC CAPACITOR	CKCYB222K50
	C10	ELECTR. CAPACITOR	CEAS101M50
	C11	ELECTR. CAPACITOR	CEASR22M50
	C12	CERAMIC CAPACITOR	CKCYB222K50
	C13, 14	ELECTR. CAPACITOR	DCH1018
	C16	ELECTR. CAPACITOR	CEAS221M16
	C17	ELECTR. CAPACITOR	CEAS101M50
	C18	ELECTR. CAPACITOR	CEAS010M50
	C19	ELECTR. CAPACITOR	CEAS471M10
	C2	ELECTR. CAPACITOR	CEASR22M50

Mark	No.	Description	Part No.
	C21	ELECTR. CAPACITOR	CEAS4R7M50
	C22-25	AUDIO FILM CAPACITOR	CFTXA104J50
	C3	ELECTR. CAPACITOR	CEAS101M10
	C4	ELECTR. CAPACITOR	CEAS470M50
	C6	CAPACITOR (ALUMINUM)	DCH1022
	C7	ELECTR. CAPACITOR	DCH1019
	C8	ELECTR. CAPACITOR	CEAS470M50
	C9	ELECTR. CAPACITOR	CEAS101M10

RESISTORS

Mark	No.	Description	Part No.
	R11, 12	CARBON FILM RESISTOR	RD1/2LF□□□J
	R14	CARBON FILM RESISTOR	RD1/2LF472J
	R3, 16	CARBON FILM RESISTOR	RD1/2PMF681J
	R33	CARBON FILM RESISTOR	RD1/2LF561J
	R38, 39	RESISTOR	DCN1020
	R41-44	CARBON FILM RESISTOR	RD1/2LF100J
	R7-9	CARBON FILM RESISTOR	RD1/2LF□□□J
		Other resistors	RD1/6PM□□□J

ACIN

COIL

Mark	No.	Description	Part No.
⚠	L301	FILTER	VTL-004

CAPACITORS

Mark	No.	Description	Part No.
⚠	C301-303	CAPACITOR (CERAMIC)	RCG-009

OTHERS

Mark	No.	Description	Part No.
⚠	CN36, 74	CONNECTOR	SD-5277-02A

◉ POWB (DWR1078)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC101	REGULATOR IC	NJM78M05FA
	IC102	MECHANISM DRIVER IC	TA7291S
	IC103	REGULATOR IC	NJM78M12FA
	IC104	REGULATOR IC	NJM78M08FA
	IC105	REGULATOR IC	NJM79M08FA
	IC106	REGULATOR IC	NJM79L12A
⚠	D101	DIODE	S2VB10F
	D102-105	DIODE	1SR139-400
	D106	ZENER DIODE	MTZ4. 3C
⚠	D108	DIODE	S2VB10F
⚠	D109	DIODE	S10VB10-DF9

CAPACITORS

Mark	No.	Description	Part No.
	C101	CERAMIC CAPACITOR	CKCYF103Z50
	C102	ELECTR. CAPACITOR	RCH1032
	C103	ELECTR. CAPACITOR	CEAS4R7M50
	C104	ELECTR. CAPACITOR	CEAS470M25
	C105	ELECTR. CAPACITOR	CEAS010M50
	C106	ELECTR. CAPACITOR	CEAS221M25
	C107	CERAMIC CAPACITOR	CKCYF103Z50
	C109	ELECTR. CAPACITOR	CEAS010M50
	C110, 111	ELECTROLYTIC CAPACIT	CEAS102M35
⚠	C112, 113	CAPACITOR (CERAMIC)	RCG-009
	C114, 115	ELECTROLYTIC CAPACIT	DCH1034
	C116, 117	ELECTR. CAPACITOR	CEAS470M25
	C118-121	ELECTR. CAPACITOR	CEAS010M50

Mark	No.	Description	Part No.

RESISTORS

Mark	No.	Description	Part No.
⚠	R103	CARBON FILM RESISTOR	RD1/2LF4R7J
⚠	R112, 113	METAL OXIDE RESISTOR	RS1LMF151J
	R114, 115	METAL OXIDE RESISTOR	RS1LMF103J
⚠	R108	METAL OXIDE RESISTOR	RS3LMF3R3J
	R101, 102, 104-107, 110, 111	CARBON FILM RESISTOR	RD1/4VM□□□J

OTHERS

Mark	No.	Description	Part No.
⚠	CN76	CONNECTOR	SD-5277-02A

PSWB

SWITCH

Mark	No.	Description	Part No.
⚠	S	POWER SWITCH (POWER)	DSA1005

CAPACITORS

Mark	No.	Description	Part No.
⚠	C201, 202	CAPACITOR (CERAMIC)	RCG-009

PSEL

SWITCH

Mark	No.	Description	Part No.
⚠	S101	VOLTAGE SELECTOR SW	DSX1003

OPER

SWITCHES

Mark	No.	Description	Part No.
	S301-303	LIGHT ACTION SWITCH (MEMORY CLEAR, MENU ROTATION, SERVICE MODE)	DSG-107

◉ SPTB (DWX1124)

OTHERS

Mark	No.	Description	Part No.
⚠		SPEAKER TERMINAL 4-P	AKE1013

CRJB

CAPACITORS

Mark	No.	Description	Part No.
	C501	CAPACITOR ARRAY	DCG-105
	C502	CERAMIC CAPACITOR	CKCYF102Z50
	C503	CERAMIC CAPACITOR	CKCYF103Z50

OTHERS

Mark	No.	Description	Part No.
		SOCKET (CONTROL)	VKN1072

◉ MESS (DWG1128)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D101, 102	LED	LN0401RP2
	D103-105	LED	LN0603RP2

RESISTORS

Mark	No.	Description	Part No.
		All resister	RD1/6PM□□□J

◉ ASEL (DWS1107)

SWITCH

Mark	No.	Description	Part No.
⚠	S	VOLTAGE SELECTOR SW (SPEAKER SELECTOR)	DSX1010

◉DISP (DWG1129)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D201	LED	LN526YA
	D202, 203	LED	LN526RA(V)

◉PREB (DWK1013)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1	LOGIC IC	TC4052BP
	IC2, 3	OP-AMP IC	NJM4558S
	Q1, 2	TRANSISTOR	2SC3311A
	Q3	TRANSISTOR	2SA933S
	Q4	TRANSISTOR	2SC1740S
	Q5	TRANSISTOR	DTA124ES
	D1	DIODE	1SS254
	D2	ZENER DIODE	MTZ7. 5B
	D3	ZENER DIODE	MTZ5. 1B/C

CAPACITORS

Mark	No.	Description	Part No.
	C1	CERAMIC CAPACITOR	CKCYF103Z50
	C10	CERAMIC CAPACITOR	CGCYX473M25
	C11, 12	ELECTR. CAPACITOR	CEASR47M50
	C13-15	ELECTR. CAPACITOR	CEAS4R7M50
	C16	MYLOR FILM CAPACITOR	CQMA123J50
	C17	AUDIO FILM CAPACITOR	CFTXA473J50
	C18	MYLOR FILM CAPACITOR	CQMA122J50
	C19	MYLOR FILM CAPACITOR	CQMA682J50
	C2	CERAMIC CAPACITOR	CKCYF103Z50
	C20	ELECTR. CAPACITOR	CEAS4R7M50
	C21	ELECTR. CAPACITOR	CEAS470M16
	C22	ELECTR. CAPACITOR	CEAS4R7M50
	C23	ELECTR. CAPACITOR	CEAS470M16
	C24-26	ELECTR. CAPACITOR	CEAS4R7M50
	C27	MYLOR FILM CAPACITOR	CQMA122J50
	C28	MYLOR FILM CAPACITOR	CQMA682J50
	C29	ELECTR. CAPACITOR	CEAS4R7M50
	C3	ELECTR. CAPACITOR	CEAS010M50
	C30	ELECTR. CAPACITOR	CEAS4R7M50
	C31	MYLOR FILM CAPACITOR	CQMA123J50
	C32	AUDIO FILM CAPACITOR	CFTXA473J50
	C33, 34	ELECTR. CAPACITOR	CEAS010M50
	C35	CERAMIC CAPACITOR	CGCYX473M25
	C36	ELECTR. CAPACITOR	CEAS221M16
	C4	ELECTR. CAPACITOR	CEAS010M50
	C5	CERAMIC CAPACITOR	CGCYX473M25
	C6, 7	ELECTR. CAPACITOR	CEAS470M16
	C8, 9	CERAMIC CAPACITOR	CGCYX473M25

RESISTORS

Mark	No.	Description	Part No.
	VR1	VARIABLE RESISTOR	DCS1013
	VR2, 3	VARIABLE RESISTOR	DCS1014
	Other resistors		RD1/6PM□□□J

WBFT

OTHERS

Mark	No.	Description	Part No.
	CN150, 151		DKA1003

◉BGMB (DWK1014)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC201	OP-AMP IC	NJM4558DX
	IC202	E-VR IC	M5222L
	IC203	LOGIC IC	TC74HC00AP
	Q201, 202	TRANSISTOR	2SC1740S
	D201, 202, 204	DIODE	1SS254
	D203	ZENER DIODE	MTZ5. 1B

SWITCH

Mark	No.	Description	Part No.
	S201	SWITCH (STEREO/MONO)	DSH-106

CAPACITORS

Mark	No.	Description	Part No.
	C201, 202	ELECTR. CAPACITOR	CEANP010M50
	C203, 204	ELECTR. CAPACITOR	CEAS010M50
	C205, 206	ELECTR. CAPACITOR	CEAS4R7M50
	C207, 208	ELECTROLYTIC CAPACIT	CEAS2R2M50
	C209	ELECTROLYTIC CAPACIT	CEANP221M10
	C210, 211	ELECTR. CAPACITOR	CEAL470M16
	C212	CERAMIC CAPACITOR	CKDYB222K50

RESISTORS

Mark	No.	Description	Part No.
	VR201	VARIABLE RESISTOR	DCS1010
	Other resisters		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	JA201	PIN JACK	PKB-009

◉KEYB (DWS1101)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D301-310	LED	SLV-31MC3
	D311-314	LED	SLV-31DC3
	D315-322	LED	SLV-31YC3

SWITCHES

Mark	No.	Description	Part No.
	S301-310	SWITCH (1-10)	DSG1011
	S311-316	SWITCH (CLEAR, BEST HITS ROTATION MENU)	RSG-155

RESISTORS

Mark	No.	Description	Part No.
	All resistors		RD1/6PM□□□J

RMJB

SEMICONDUCTOR

Mark	No.	Description	Part No.
	D401-404	ZENER DIODE	MTZJ5. 6B

COIL

Mark	No.	Description	Part No.
	L401	AXIAL INDUCTOR	LAU010K

CAPACITORS

Mark	No.	Description	Part No.
	C401-406	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

Mark	No.	Description	Part No.
	R401-404	CARBONFILM RESISTOR	RD1/6PM221J

OTHERS

Mark	No.	Description	Part No.
	SOCKET	(REMOTE CONTROL)	VKN1072

WBJB

CAPACITORS

Mark	No.	Description	Part No.
	C101, 102	CERAMIC CAPACITOR	CKCYF102Z50
	C103	CERAMIC CAPACITOR	CKCYF103Z50

OTHERS

Mark	No.	Description	Part No.
	CN101, 102	TERMINAL (WALL BOX CONTROL TERMINAL)	DKA1004

RSSB

SWITCH

Mark	No.	Description	Part No.
	S201	DIP SWITCH (FUNCTION)	DSX1011

CAPACITORS

Mark	No.	Description	Part No.
	C201, 202	CERAMIC CAPACITOR	CKCYF102Z50
	C203, 204	CERAMIC CAPACITOR	CKCYF103Z50

RESISTOR

Mark	No.	Description	Part No.
	R201	CARBONFILM RESISTOR	RD1/6PM472J

OTHERS

Mark	No.	Description	Part No.
	J201	SOCKET (DATA OUT)	DKN1037

IOJB

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q100, 101	TRANSISTOR	2SA1309A

CAPACITORS

Mark	No.	Description	Part No.
	C100, 101	CERAMIC CAPACITOR	CKPUYB102K50
	C102, 103	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

Mark	No.	Description	Part No.
	R100-103	CARBONFILM RESISTOR	RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	JA53	JACK (LINE IN/OUT)	RKB-020

◉ BRAN (DWX1108)

There is not supplied parts in this unit.

◉ ROTA (DWX1109)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q401	DIGITAL TRANSISTOR	UN4112
	Q402	TRANSISTOR	2SD1762-F8
	Q403	DIGITAL TRANSISTOR	UN4212
	Q404	TRANSISTOR	2SB1185-F8
	D401, 402	RECTIFIER DIODE	1SR139-400

CAPACITORS

Mark	No.	Description	Part No.
	C401	ELECTR. CAPACITOR	CEAL470M6R3
	C402	CERAMIC CAPACITOR	CKPUYF223Z25
	C403	ELECTROLYTIC CAPACIT	CEAS101M25

RESISTORS

Mark	No.	Description	Part No.
	R401-405	CARBONFILM RESISTOR	RD1/6PM□□□J

◉ POSS (DWX1110)

SEMICONDUCTOR

Mark	No.	Description	Part No.
	D501		GP1A14

CAPACITOR

Mark	No.	Description	Part No.
	C501	CERAMIC CAPACITOR	CKPUYF223Z25

RESISTOR

Mark	No.	Description	Part No.
	R501	CARBONFILM RESISTOR	RD1/6PM391J

SENS

SEMICONDUCTOR

Mark	No.	Description	Part No.
	D701	LED (RED)	SLR-54VR35H

CAPACITOR

Mark	No.	Description	Part No.
	C701	CERAMIC CAPACITOR	CKPUYF223Z25

OTHERS

Mark	No.	Description	Part No.
		REMOTE SENSOR	GP1U50X

◉ CNTB (DWX1132)

SEMICONDUCTOR

Mark	No.	Description	Part No.
	IC801		GP1A30R

CAPACITOR

Mark	No.	Description	Part No.
	C801	CERAMIC CAPACITOR	CKPUYF223Z25

RESISTOR

Mark	No.	Description	Part No.
	R801	CARBONFILM RESISTOR	RD1/6PM121J

LAMP

CAPACITORS

Mark	No.	Description	Part No.
⚠	C601, 602	CAPACITOR (CERAMIC)	RCG-009
⚠	C603, 604	POWER CAPACITOR	DCG1003

RESISTOR

Mark	No.	Description	Part No.
⚠	R601, 602	CARBON FILM RESISTOR	RD1/4PM225J

OTHERS

Mark	No.	Description	Part No.
⚠	CN33	CONNECTOR	SD-5277-02A

◉ NETWORK ASSEMBLY (SWN1219)

COILS

Mark	No.	Description	Part No.
	L1	(3.3mH)	STH1100
	L3	(3.9mH)	STH1021
	L4	(0.22mH)	STH-327

CAPACITORS

Mark	No.	Description	Part No.
	C1		CES4220KJ
	C2		CES4100KJ
	C4		CES4DX1R8KJ

RESISTOR

Mark	No.	Description	Part No.
	R4		RT10BAL100K

OTHERS

Mark	No.	Description	Part No.
	Br1	(1A)	SSG-004

CD SECTION

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5 %, and K = 10 %).

560 Ω→56 × 10^1 →561 ········· RD1/4PS$\boxed{5}\boxed{6}\boxed{1}$J
47k Ω→47 × 10^3 →473 ········· RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
0.5 Ω→0R5 ········· RN2H$\boxed{0}\boxed{R}\boxed{5}$K
1 Ω→010 ········· RS1P$\boxed{0}\boxed{1}\boxed{0}$K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω→562 × 10^1 →5621 ········· RN1/4SR$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

EKEY

SWITCHES

Mark	NO	Description	Part NO.
	S301-303	SWITCH (EJECT(A,B,C))	DSG1009

DEGT (DWX1116)

SEMICONDUCTORS

Mark	NO	Description	Part NO.
	IC1	PRE AMP IC	CXA1081S
	IC10	POWER OP AMP	TA7256P
	IC11	SYSTEM PRESET IC	M51953BL
	IC2	SERVO CONTROL IC	CXA1082AS
	IC3	EFM DEMODULATION IC	CXD1135QZ
	IC4	MEMORY IC	CXK5816PN-12L
	IC5	MCU	PD0068B
	IC6-8	POWER OP AMP	TA7256P
	Q1	TRANSISTOR	DTA124ES
	Q10	TRANSISTOR	DTC124ES
	Q11	TRANSISTOR	2SC1740S
	Q12	TRANSISTOR	DTA124ES
	Q13	TRANSISTOR	2SA933S
	Q14	TRANSISTOR	DTA124ES
	Q15	TRANSISTOR	2SC2497
	Q16	TRANSISTOR	DTC124ES
	Q2	TRANSISTOR	2SC2497
	Q3	TRANSISTOR	DTA124ES
	Q4	TRANSISTOR	2SC2497
	Q5	TRANSISTOR	DTA124ES
	Q6	TRANSISTOR	2SC2497
	Q7, 8	TRANSISTOR	2SC1740S
	Q9	TRANSISTOR	2SA1399
	D4-7	DIODE	1SS254

CAPACITORS

Mark	NO	Description	Part NO.
	C1	ELECTR. CAPACITOR	CEASR47M50
	C10, 11	CERAMIC CAPACITOR	CCCCH300J50
	C12, 13	ELECTR. CAPACITOR	CEAS330M16
	C14	CERAMIC CAPACITOR	CKCYF103Z50
	C15, 16	CERAMIC CAPACITOR	CCCCH220J50
	C17	ELECTR. CAPACITOR	CEAS330M16
	C18, 19	CERAMIC CAPACITOR	CKCYB102K50
	C2	MYLOR FILM CAPACITOR	CQMA333J50
	C20	CERAMIC CAPACITOR	CKCYB102K50
	C21, 22	ELECTR. CAPACITOR	CEAS330M16
	C23	ELECTR. CAPACITOR	CEAS010M50
	C24	CERAMIC CAPACITOR	CKCYB102K50
	C25	CERAMIC CAPACITOR	CKCYF103Z50
	C26-29	ELECTR. CAPACITOR	CEAS330M16
	C3	MYLOR FILM CAPACITOR	CQMA102J50
	C30, 31	ELECTR. CAPACITOR	CEAS330M16
	C32	ELECTR. CAPACITOR	CEAS101M10
	C33	CERAMIC CAPACITOR	CCCCH390J50
	C34	MYLOR FILM CAPACITOR	CQMA472J50
	C35	CERAMIC CAPACITOR	CCCCH300J50
	C36, 37	ELECTR. CAPACITOR	CEAS330M16
	C38	CERAMIC CAPACITOR	CCCCH300J50
	C39	MYLOR FILM CAPACITOR	CQMA333J50
	C40	ELECTR. CAPACITOR	CEAS330M16
	C41	MYLOR FILM CAPACITOR	CQMA332J50
	C42	MYLOR FILM CAPACITOR	CQMA103J50
	C43	ELECTR. CAPACITOR	CEASR47M50
	C44	MYLOR FILM CAPACITOR	CQMA103J50
	C45	ELECTR. CAPACITOR	CEAS330M16
	C46	MYLOR FILM CAPACITOR	CQMA272J50
	C47, 48	ELECTR. CAPACITOR	CEAS330M16
	C49	MYLOR FILM CAPACITOR	CQMA333J50
	C50	ELECTR. CAPACITOR	CEAS330M16
	C51	MYLOR FILM CAPACITOR	CQMA472J50
	C52, 53	MYLOR FILM CAPACITOR	CQMA104J50
	C54	MYLOR FILM CAPACITOR	CQMA102J50
	C55	ELECTR. CAPACITOR	CEAS4R7M50
	C56	MYLOR FILM CAPACITOR	CQMA104J50
	C57	ELECTR. CAPACITOR	CEAS330M16
	C58	MYLOR FILM CAPACITOR	CQMA333J50
	C59	MYLOR FILM CAPACITOR	CQMA104J50
	C60	ELECTROLYTIC CAPACIT	CEANP4R7M50
	C61, 62	ELECTR. CAPACITOR	CEAS330M16
	C63	MYLOR FILM CAPACITOR	CQMA103J50
	C64	ELECTR. CAPACITOR	CEAS330M16

Mark	No.	Description	Part No.
	C65	ELECTR. CAPACITOR	CEAS101M10
	C66	MYLOR FILM CAPACITOR	CQMA472J50
	C67	ELECTR. CAPACITOR	CEAS3R3M50
	C68, 69	ELECTR. CAPACITOR	CEAS330M16
	C70-75	CERAMIC CAPACITOR	CCCCH221J50
	C76-78	ELECTR. CAPACITOR	CEANP010M50
	C79, 80	ELECTR. CAPACITOR	CEAS330M16
	C81	CERAMIC CAPACITOR	CKDYF103Z50

RESISTORS

	VR2	SEMI-FIXED RESISTOR	VRTB6VS103
	VR3-7	VR	VRTB6VS223
	VR8	VR	VRTB6VS102
		Other resisters	RD1/6PM□□□J

OTHERS

	DL1, 2	DELAY LINE	PTF1012
	X1	CRYSTAL RESONATOR	DSS1010
	X2	CRYSTAL RESONATOR	PSS-012
	CN4		B8P-SHF-1AA
	CN7		5597-17APB
	CN8		B6P-SHF-1AA
		IC SOCKET	VKH-029

DJAK

CAPACITOR

	C501	CAPACITOR ARRAY	DCG1007

OTHERS

	JA501	SOCKET	VKN1072

PJAK

OTHERS

	JA601	JACK	PKB1009

MJSW

SWITCHES

	S801-803	PUSH SWITCH (MJ LOCK(1, 2, 3))	PSH1008
	S804-806	SWITCH (MJ SENS(1, 2, 3))	PSH1005

SENS

SEMICONDUCTOR

	Q901		GP1A52HR

SWITCH

	S901	(UP LIMIT)	RSF1007

CAPACITOR

	C901	ELECTROLYTIC CAPACIT	CEJA100M16

RESISTORS

	R901, 902	CARBONFILM RESISTER	RD1/6PM□□□J

Mark	No.	Description	Part No.

REJC

There is not supplied parts in this unit.

FREC

OTHERS

	CN401, 402	CONNECTOR	5597-17APB

HRMB

There is not supplied parts in this unit.

RMJB

OTHERS

		MINI JACK 3P	DKN1028

◉ ANLG (DWX1155)

SEMICONDUCTORS

	IC201	D/A CONVERTER	LC7881-C
	IC202, 203	LINEAR IC	NJM4558D
	IC204	REGULATOR IC	NJM79M05FA
	IC205	REGULATOR IC	NJM7805FA
	Q201, 202	TRANSISTOR	DTC124ES
	Q203	TRANSISTOR	DTA124ES
	Q204	TRANSISTOR	DTC124ES
	Q205, 206	TRANSISTOR	2SD1302
	Q207, 208	TRANSISTOR	2SC1740S
	Q209	TRANSISTOR	DTA124ES
	D201	BRIDGE RECTIFIER	2W02-5008-L

COIL AND FILTERS

	L201	FILTER	VTL-157
	F202-204		VTH1001

CAPACITORS

	C201, 202	CAPACITOR (CERAMIC)	RCG-009
	C203	CAPACITOR (ALUMINUM)	VCH1050
	C204	ELECTROLYTIC CAPACIT	CEAS222M16
	C205	ELECTR. CAPACITOR	CEAS102M10
	C206	ELECTR. CAPACITOR	CEAS471M10
	C207, 208	MYLOR FILM CAPACITOR	CQMA102J50
	C209, 210	ELECTR. CAPACITOR	CEAS220M50
	C211, 212	MYLOR FILM CAPACITOR	CQMA821J50
	C213, 214	MYLOR FILM CAPACITOR	CQMA471J50
	C215, 216	MYLOR FILM CAPACITOR	CQMA472J50
	C217, 218	MYLOR FILM CAPACITOR	CQMA683J50
	C219, 220	ELECTR. CAPACITOR	CEAS220M50
	C221-225	ELECTR. CAPACITOR	CEAS330M16
	C226	ELECTR. CAPACITOR	CEAS101M10
	C227	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

		All resistors	RD1/6PM□□□J

7. ADJUSTMENTS

7.1 MECHANICAL ADJUSTMENTS

7.1.1 MAIN SECTION

● Synchronous adjustment of three surfaces of the menu (Fig. 7-1)

PREPARATIONS

- Adjust without installing the motor (menu).
- Fix the center pulley to the menu shaft with the screws.

(1) Apply synchro belt between synchro pulley and center pulley both on the right and left sides.

(2) While applying a spring (tension) to the underframe and tension plate, apply a tension to the synchro belt.

(3) Fix the tension plate to the underframe with screw ①.

(4) By placing a flat plate such as a ruler on them, align the three surfaces of the menu with each other on the same level.

(5) Fix the menu shaft to the synchro pulley using a hexagonal wrench.

(6) Remove the plate placed on the menu and check the following items while turning the menu by hand.

1. Check that the three surfaces of the menu rotate smoothly.
2. Check that all the three surfaces align with each other on the same level after turning the menu shaft once.

● Adjustment of the stop position of menu rotation

PREPARATIONS

- Loosen screw Ⓐ which holds the encoder disc using a hexagonal wrench.
- Loosen screw Ⓐ which holds the adjustment plate.
- Adjust with the motor (menu) attached.

(1) Set the gap between the encoder disc and photo interrupter of the motor (menu) to $1^{+0}_{-0.5}$ mm. (Fig. 7-2)

(2) Fix the screw of the encoder disc by tightening with a hex wrench.

(3) Turn screw Ⓑ so that the carved mark on the adjustment plate aligns with the underframe. Then temporarily tighten screw Ⓐ.

(4) Push the ROTATE MENU key on the front panel of the main unit so that menu rotates. Then, perform the following adjustments depending on the condition. (Fig. 7-3)

- When the menu stops after extending the front
  ……… Loosen screw Ⓐ, then tighten screw Ⓑ turning it clockwise.
- When menu stops before reaching the front
  ……… Loosen screw Ⓐ and turn screw Ⓑ counterclockwise to loosen it.

(5) Turn the menu again and firmly tighten screw Ⓐ when the menu stops directing its surfaces to the front. (Fig. 7-4 ⓐ)

(6) Finally, turn the menu and check that the menu stops directing all of its three surfaces to the front at every 120° rotation.

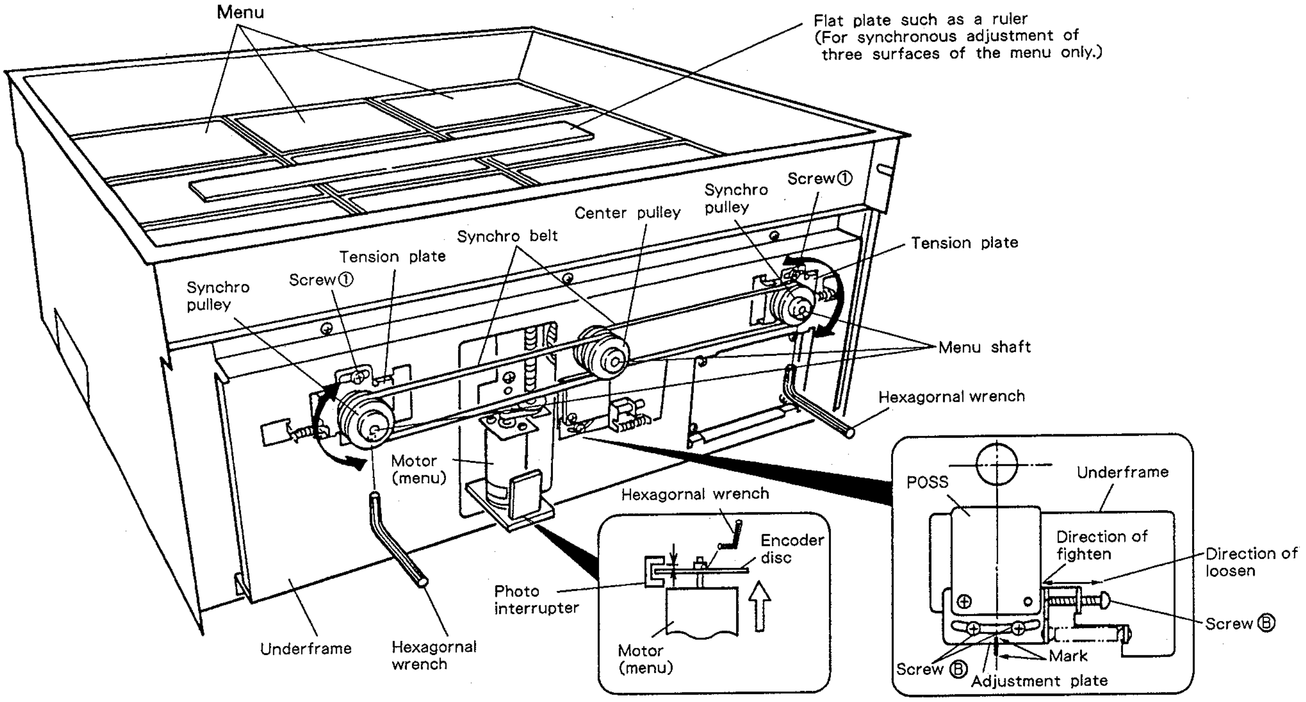
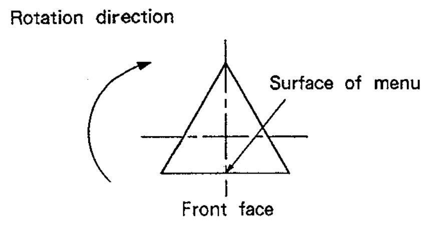

Menu
Flat plate such as a ruler
(For synchronous adjustment of three surfaces of the menu only.)
Screw①
Synchro pulley
Center pulley
Synchro belt
Tension plate
Tension plate
Synchro pulley
Screw①
Menu shaft
Hexagornal wrench
Motor (menu)
Hexagornal wrench
Underframe
Hexagornal wrench
Encoder disc
Photo interrupter
Motor (menu)
POSS
Underframe
Direction of fighten
Direction of loosen
Screw Ⓑ
Mark
Screw Ⓑ
Adjustment plate

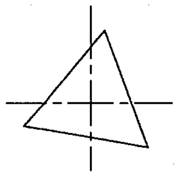
Fig. 7-1

Fig. 7-2

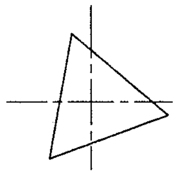
Fig. 7-3


Rotation direction
Surface of menu
Front face

ⓐ Correct stop position



ⓑ When stopping after extending the front



ⓒ When stopping before reaching the front

Fig. 7-4

7.1.2 CD SECTION

PREPARATIONS

- Set a magazine in the first and third modules of the CD main unit.
- Connect the remote control unit (RU-V101) to the CD main unit.

1. Rough adjustment of the select position

(1) Set the distance from the upper side of the sensor plate to that of the main chassis to 7mm by turning screw Ⓐ.

2. Adjustment of the select position

(1) First, proceed as follows.

① Press the 10keys in the sequence of $\boxed{1}$ + $\boxed{8}$ + STILL/STEP II▶ (DISC SELECT) key + STILL/STEP ◀II (DISC RETURN) key. When the operation is completed, check that the gap between the top of the rotation lever and the upper side of the sixth tray in the magazine is $0.3^{+0.2}_{-0}$.

② If the distance is not within the specified range, turn screw Ⓐ to adjust the position of the sensor plate and press the 10keys again in the sequence of $\boxed{1}$ + $\boxed{8}$ + STILL/STEP II▶ (DISC SELECT) key + STILL/STEP ◀II (DISC RETURN) key until the distance comes within the specified range.

③ Push the 10keys in the sequence of $\boxed{6}$ + STILL/STEP II▶ (DISC SELECT) key + STILL/STEP ◀II (DISC RETURN) key and check that the gap between the top of the rotation lever and the upper side of the sixth tray in the magazine is 0.3mm ± 0.1mm.

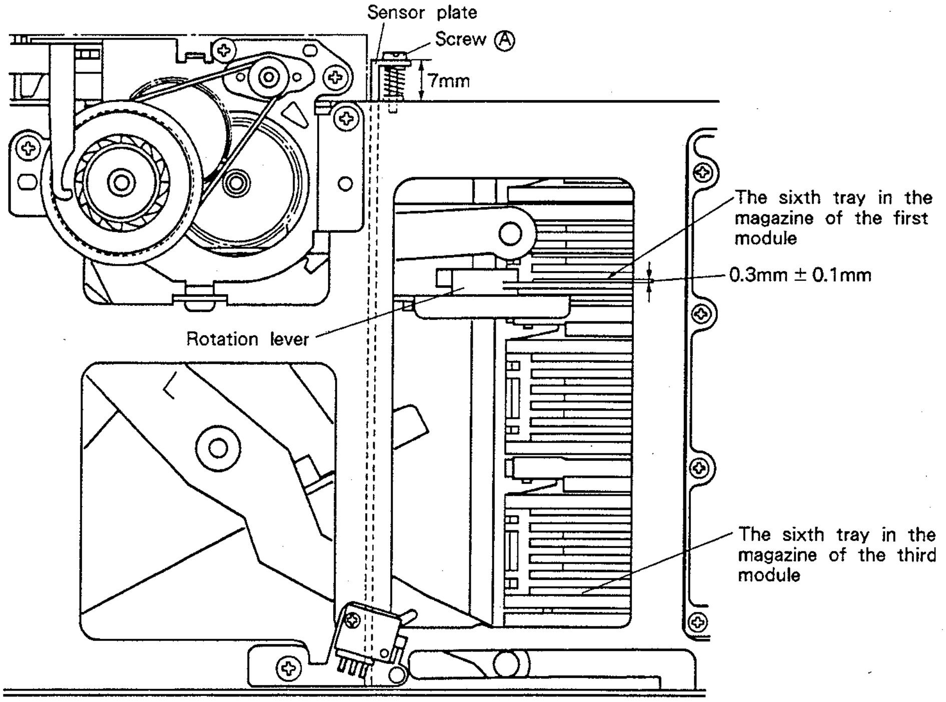

Sensor plate
Screw Ⓐ
7mm
The sixth tray in the magazine of the first module
0.3mm ± 0.1mm
Rotation lever
The sixth tray in the magazine of the third module

Fig. 7-5

7.2 ELECTRICAL ADJUSTMENTS

The adjustment items of this model should be performed in the order as shown below.

• Adjustment and check Items

1. Tracking offset focus offset and RF offset adjustmens
2. RF level adjustment
3. LD (Laser Diode) output power confirmation
4. Focus lock and spindle lock confirmation
5. Grating adjustment
6. Tracking balance adjustment
7. Tangential adjustment
8. Focus gain adjustment
9. Tracking gain adjustment
10. VCO free-run frequency adjustment
11. Method to confirm S character (FOCUS ERROR)

• Measuring Equipment

1. Dual trace oscilloscope
2. Laser power meter
3. Test disc (YEDS-7)
4. Tracking balance adjustment filter
5. Loop gain adjustment filter
6. Signal generator
7. Frequency counter
8. Other general tools
9. Remote control unit (RU-V101)

• Service Mode

The CD main unit can be operated independently when remote control unit (RU-V101) is connected to the unit.

For the operation, refer to Service manual (1) (ARP2047) : Service Mode (page 14).

Note: Before operating the remote control unit (RU-V101), move the mechanism by using the 10keys +STILL/STEP II▶ (DISC SELECT) key to the position where the test disc has been placed.

• Adjustment VRs and their names

VR1 : Laser power
VR2 : RF offset (RF. OFS)
VR3 : Focus gain (FCS. GAN)
VR4 : Tracking gain (TRK. GAN)
VR5 : Tracking balance (TRK. BAL)
VR6 : Focus offset (FCS. OFS)
VR7 : Tracking offset (TRK. OFS)
VR8 : VCO adjustment (VCO. ADJ)

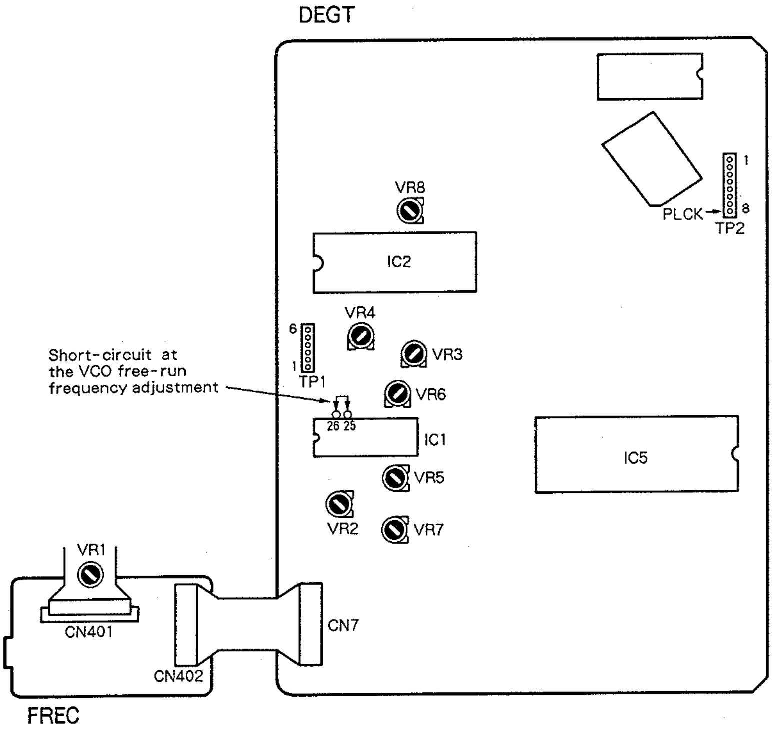
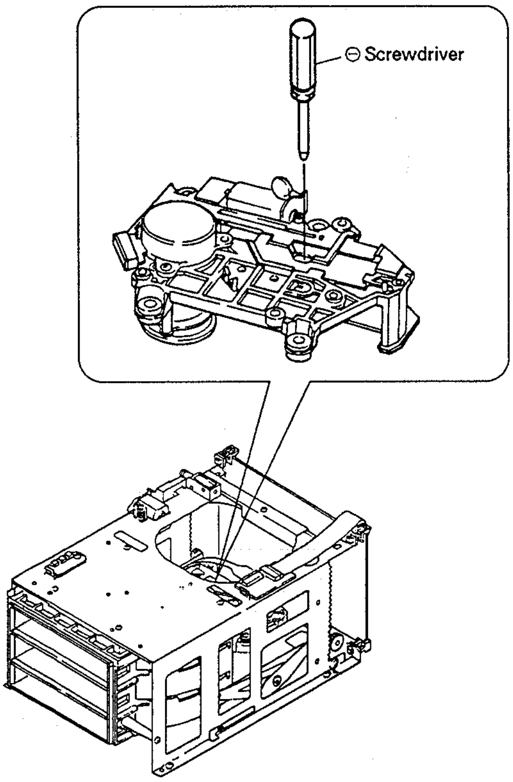
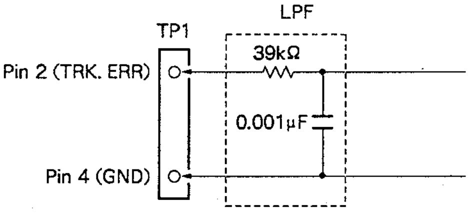


Fig. 7-6 Adjusting point

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
1	**TRACKING OFFSET, FOCUS OFFSET AND RF OFFSET ADJUSTMENT**					
						● Set to Service mode.
				VR5 (TRK. BAL)	Tracking offset 45°	● Turn VR5 TRK. BAL (Tracking balance) volume clockwise 45° from the center.
			TP1 Pin 2 (TRK. ERR)	VR7 (TRK. OFS)	0V ± 50mV	● Adjust with VR7 TRK. OFS (Tracking offset) volume so that the voltage of pin 2 TRK. ERR (Tracking error) of TP1 becomes 0V ± 50mV.
			TP1 Pin 6 (FCS. ERR)	VR6 (FCS. OFS)	FOCUS offset 0V ± 50mV	● Adjust VR6 FCS. OFS (focus offset) so that the FCS. ERR (focus error) voltage at TP1 pin 6 becomes 0V ± 50mV.
			TP1 Pin 1 (RF OUTPUT)	VR2 (RF. OFS)	RF offset 100mV ± 50mV	● Adjust VR2 RF. OFS (RF offset) so that the RF output voltage at TP1 pin 1 becomes 100mV ± 50mV.
2	**RF LEVEL ADJUSTMENT**					
						● Set to Service mode.
			TP1 Pin 1 (RF)			● Play TEST disc and connect probe of an oscilloscope to pin 1 RF (RF output) of TP1 and measure the P-P voltage of RF waveform.
				VR1 Laser power	1.5Vp-p $^{+0.2V}_{-0V}$	● Adjust VR1 (Laser power) so that the value is within 1.5Vp-p $^{+0.2V}_{-0V}$.
3	**LD (LASER DIODE) OUTPUT POWER CONFIRMATION**					
						● Set to Service mode.
						● Press $\boxed{-\text{MULTI-SPEED}+}$ key + $\boxed{0}$ and turn ON LD (laser diode).
					Confirmation : less than 0.13mW	● Place sensor of the laser power meter immediately above the object lens and confirm that the output power of the LD is less than 0.13mW.
4	**FOCUS LOCK AND SPINDLE LOCK CONFIRMATION**					
						● Set TEST disc.
						● Set to Service mode.
						● Shift the pickup close to the center of the disc by pressing the $\boxed{-\text{MULTI-SPEED}+}$ key + $\boxed{4}$. * Note that this step must be performed.
	0.5V/div	100msec /div	TP1 Pin 1 (RF output)		RF output exists	● Observe pin 1 RF (RF output) of TP1 with an oscilloscope and confirm that the RF signal is output after pressing the $\boxed{-\text{MULTI-SPEED}+}$ key + $\boxed{1}$.
					Normal rotation	● Press $\boxed{-\text{MULTI-SPEED}+}$ key + $\boxed{2}$ and be sure that the disc rotates in normal direction at almost the specified spped (as it is close to the center of the disc, the rotating speed is around 300 rpm) and not rotates abnormally or inversely.

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
5	**GRATING ADJUSTMENT**					
	 Fig. 7-7					● Set to Service mode. ● Shift the pickup close to the center of the disc by pressing −MULTI-SPEED+ key + 4 so that the grating adjustment screw of the pickup can be seen through the oval hole of the upper side of the servo mechanism. ● Insert the ⊖ screwdriver into the adjusting hole from the upper side of the mechanism as shown in Fig. 7-7, and confirm that the grating screw turns. ● Press −MULTI-SPEED+ key + 1 and −MULTI-SPEED+ key + 2 sequentially and close the focus servo and spindle servo. (Do not close the tracking servo.) ● Observe the waveform of pin 2 TRK. ERR (Tracking error) of TP1 with an oscilloscope. At this point, insert a 4kHz cutoff low-pass filter. (Fig. 7-8)  LPF TP1 39kΩ Pin 2 (TRK. ERR) 0.001μF Pin 4 (GND) Fig. 7-8
	0.5V/div	5msec /div	TP1 Pin 2 (TRK. ERR)	Grating	Null point	● Turn the ⊖ screwdriver and find null point. (Photo. 7-1)
				Grating	Maximum amplitude	● Then, turn slowly the ⊖ screwdriver counterclockwise from the null point and adjust at the point where the waveform (Tracking error signal) firstly becomes maximum amplitude. (See Photo. 7-2.) Note : If the ⊖ screwdriver is pressed strongly, the pickup moves toward disc center, accordingly adjustment becomes difficult. ● Finally, be sure to confirm that the tracking error signal (at this time, 4 kHz of cutoff low-pass filter is not inserted) when the pickup is moved toward the disc center and the P-P voltage of the tracking error signal at the outer circumference of the disc are not varied greatly. When the level is deviated over ±10 %, adjust again by turning grating screw to the maximum error amplitude point.

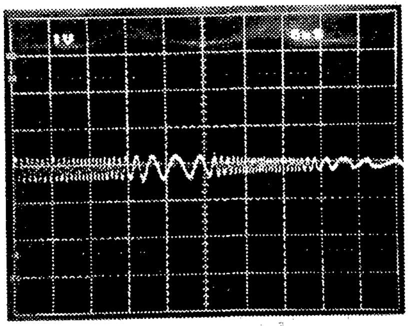


Photo. 7-1
Null point

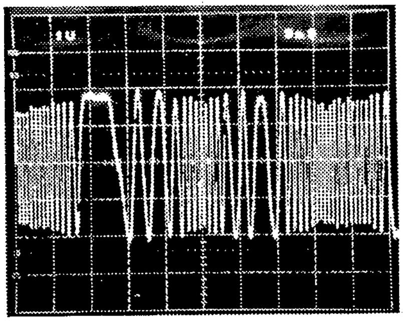


Photo. 7-2
Maximum amplitude

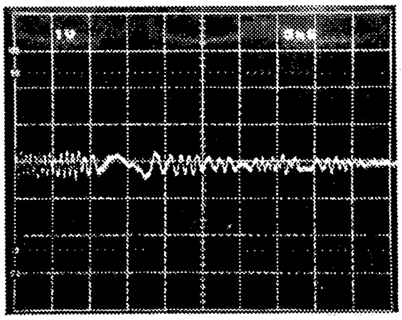


Photo. 7-3
This is not the null-point waveform

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
6	**TRACKING BALANCE ADJUSTMENT**					
	0.5V/div	5msec /div	TP1 Pin 2 (TRK. ERR)	VR5 (TRK. BAL)	(TRK. ERR)	● Set the TEST disc. ● Set to Service mode. ● Shift the carriage close to the center of the disc by pressing −MULTI-SPEED+ key + 4. ● Press −MULTI-SPEED+ key + 1 and −MULTI-SPEED+ key + 2 to start turning the disc. ● Observe pin 2 TRK. ERR (Tracking error) of TP1 with an oscilloscope and adjust with VR5 TRK. BAL (Tracking balance) volume so that the DC component of the tracking error disappears. Note: Before proceeding with the above adjustments, be sure to adjust the tracking error offset.

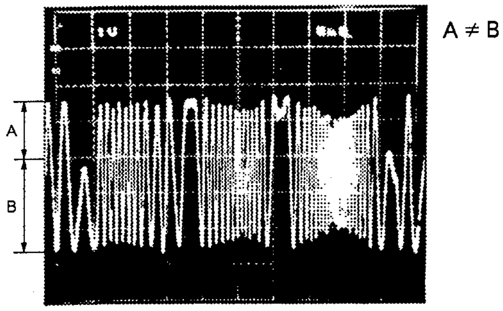


Photo. 7-4 DC elements mixed in signal

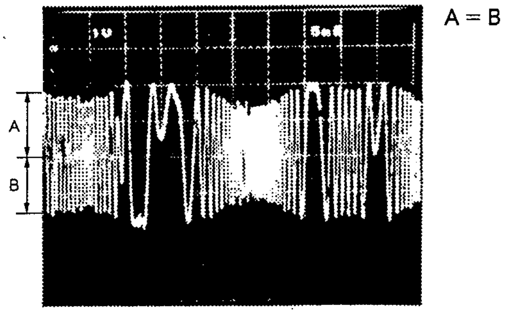
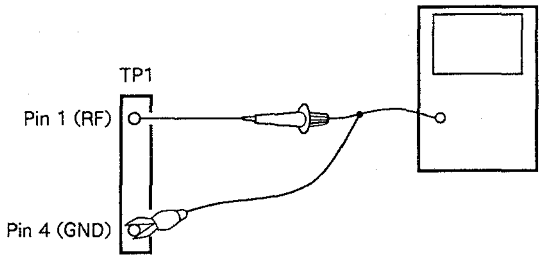
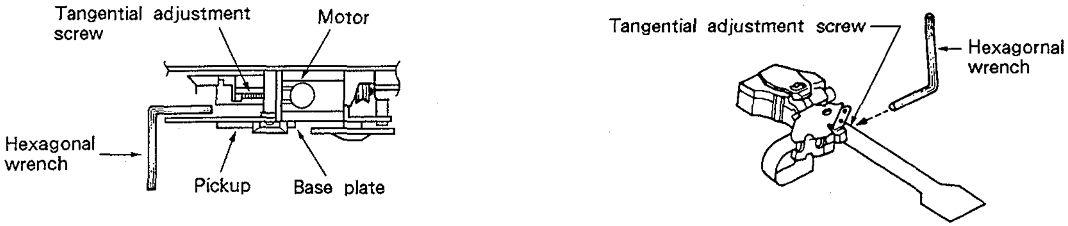


Photo. 7-5 DC elements eliminated

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
7	**TANGENTIAL ADJUSTMENT**					
		200nsec /div	TP1 Pin 1 (RF output)	Tangential adjustment screw	Best eye pattern	● Set the TEST disc. ● Set to Service mode. ● Shift the pickup close to the center of the disc by pressing −MULTI-SPEED+ key + 4. ● Press −MULTI-SPEED+ key + 1, −MULTI-SPEED+ key + 2 and −MULTI-SPEED+ key + 3 sequentially, and close all the servos. (Pause indicator lights up.) ● Observe pin 1 RF (RF output) of TP1 with an oscilloscope and adjust with the tangential screw so that the eye pattern becomes clear. (Fig. 7-9 and 7-10) ● The adjusting point is the middle point between the point where the eye pattern becomes deteriorate by turning the tangential screw clockwise and the point where the eye pattern becomes deteriorate by turning the tangential screw counterclockwise. As a criterion, observe that the overall waveform is clear and one of the diamond shapes within the eye pattern (Photo. 7-7), and adjust at as an optimum point where the diamond shape is seen relatively fine line.  Fig. 7-9 Note : During the adjustment, hold hexagonal wrench to upward so as to keep the pickup body not goes down.



In the figure below, the top and bottom is opposite to that of the actual product.

Fig. 7-10 Tangential adjustment

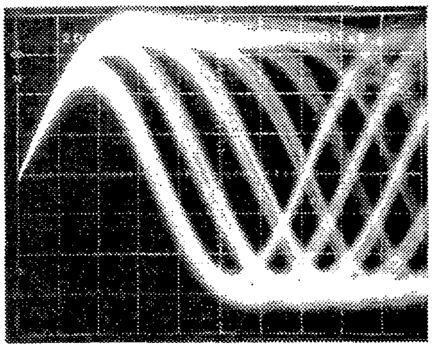


Photo. 7-6

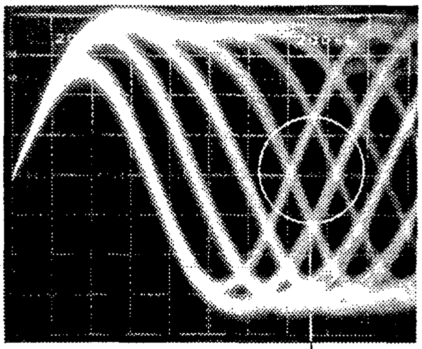


Photo. 7-7

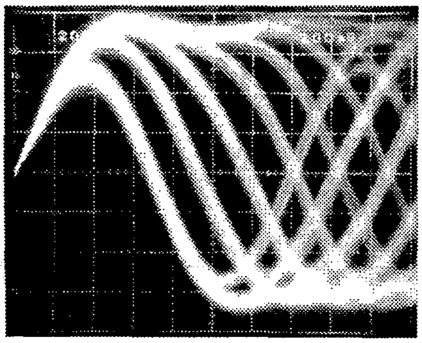
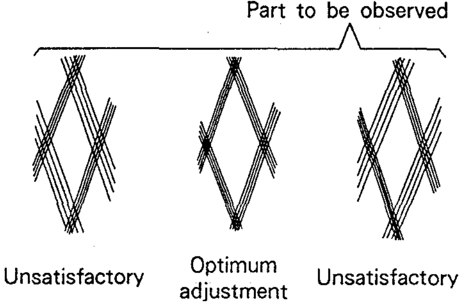
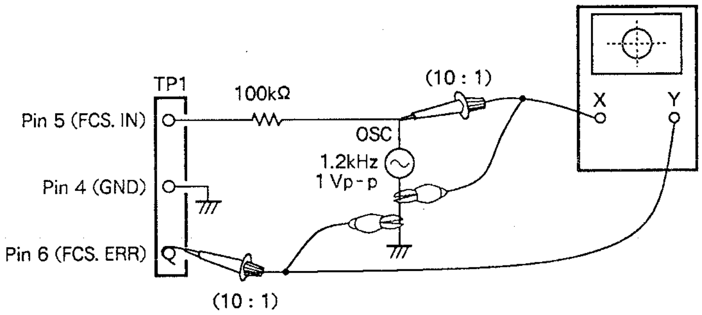


Photo. 7-8


Part to be observed
Unsatisfactory
Optimum adjustment
Unsatisfactory

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
8	**FOCUS GAIN ADJUSTMENT**					
	20mV/div, 5mV/div. CH1 (X), CH2 (Y) (Probe 10 : 1)		X axis : TP1 Pin 5 (FCS. IN) Y axis : TP1 Pin 6 (FCS. ERR)	VR3 (FCS. GAN)	Phase difference 90°	● In the POWER OFF state, connect an oscilloscope and oscillator as shown in Fig. 7-11. ● Set the unit to the normal PLAY mode. ● Turn the POWER of oscillator ON and output 1.2kHz 1Vp-p. Note : Depending upon oscillators, some of them output DC when their power turned ON. Therefore, it is desirable to connect oscillator after turning the power ON. ● Adjust with VR3 FCS. GAN (Focus gain) volume so that the lissajous figure of the oscilloscope becomes horizontal circle (Phase difference 90°).  TP1 100kΩ (10 : 1) X Y Pin 5 (FCS. IN) OSC 1.2kHz 1 Vp-p Pin 4 (GND) Pin 6 (FCS. ERR) (10 : 1) Fig. 7-11

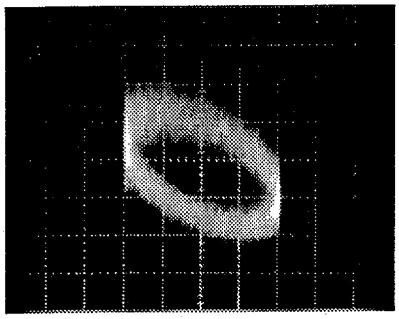


Photo. 7-9
Gain overcompensated

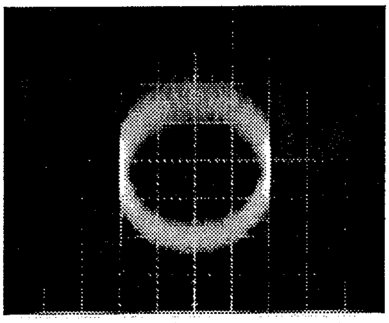


Photo. 7-10
Gain optimum

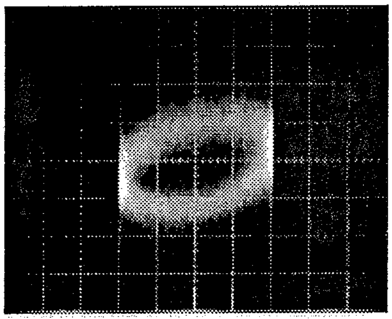
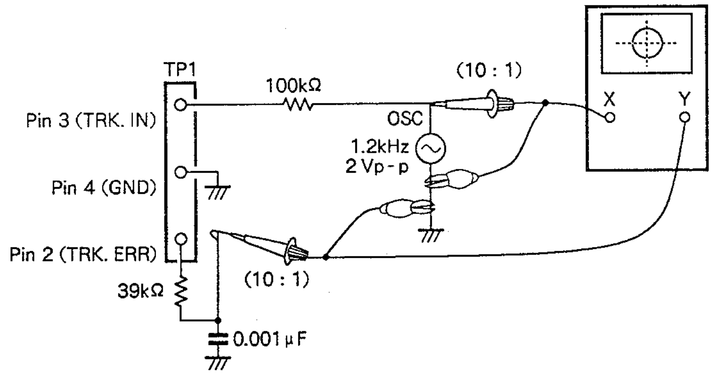


Photo. 7-11
Gain undercompensated

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
9	**TRACKING GAIN ADJUSTMENT**					
	50mV/div, 5mV/div. CH1 (X), CH2 (Y) (Probe 10 : 1)		X axis : TP1 Pin 3 (TRK. IN) Y axis : TP1 Pin 2 (TRK. ERR)	VR4 (TRK. GAN)	Phase difference 90°	● In the POWER OFF state, connect an oscilloscope and oscillator as shown in Fig. 7-12. ● Set the unit to the normal PLAY mode. ● Turn the POWER of oscillator ON and output 1.2kHz 2Vp-p. Note : Depending upon oscillators, some of them output DC when their power turned ON. Therefore, it is desirable to connect oscillator after turning the power ON. ● Adjust with VR4 TRK. GAN (Tracking gain) volume so that the lissajous figure of the oscilloscope becomes horizontal circle (phase difference 90°).  TP1 100kΩ (10 : 1) X Y Pin 3 (TRK. IN) OSC 1.2kHz 2 Vp-p Pin 4 (GND) Pin 2 (TRK. ERR) 39kΩ (10 : 1) 0.001 μF Fig. 7-12

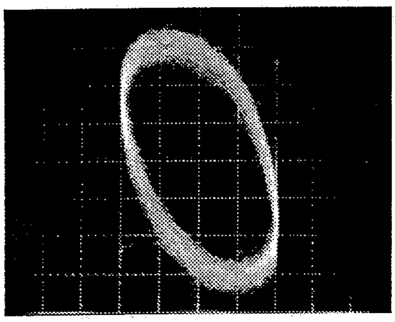


Photo. 7-12
Gain overcompensated

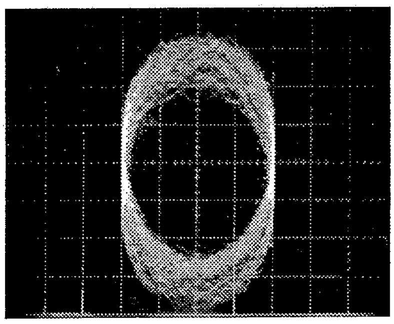


Photo. 7-13
Gain optimum

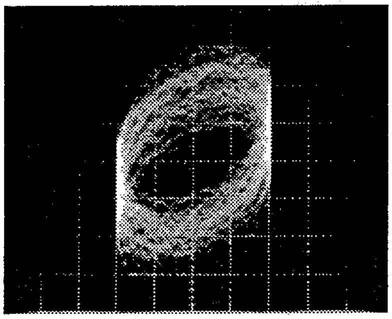


Photo. 7-14
Gain undercompensated

Step No.	Oscilloscope Setting		Test Points	Adjusting Points	Check items/ Adjustment specifications	Adjustment procedure
	V	H				
10	**VCO FREE RUN FREQUENCY ADJUSTMENT**					
			TP2 Pin 8 (PLCK)	VR8 (VCO. ADJ)	4.275 ± 0.01MHz	● Set to Service mode. ● Short-circuit between pin 25 and pin 26 of IC1 in the DEGT assembly with ⊖ screwdriver, etc. (Fig. 7-6) ● Connect frequency counter, which is measurable over 10MHz, to pin 8 of TP2 (PLCK). ● Adjust with VR8 VCO. ADJ (VCO adjustment) volume so that the value of frequency counter becomes 4.275 ± 0.01MHz.
11	**METHOD TO CONFIRM S CHARACTER (FOCUS ERROR)**					
			TP1 Pin 6 (FCS. ERR)			● Set to Service mode. ● Short-circuit between pin 5 FCS. IN (Focus in) of TP1 and GND. ● Press −MULTI-SPEED+ key + 1 and observe the waveform of pin 6 FCS. ERR (Focus error) of TP1 at that time with an oscilloscope.

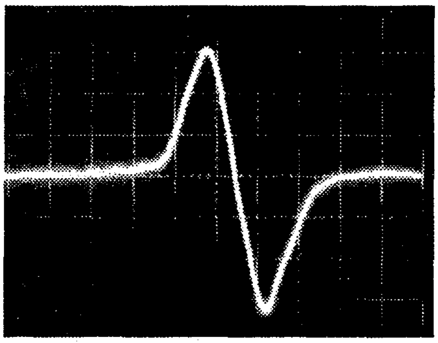


Photo. 7-15 Focus error

7. RÉGLAGES

7.1 RÉGLAGES MECANIQUES

7.1.1 SECTION PRINCIPALE

● **Réglages synchronisé de trois surfaces du menu (Fig. 7-1)**

PREPARATIFS

- Ajuster sans installer le moteur (menu).
- Fixer la poulie centrale à l'arbre de menu à l'aide des vis.

(1) Placer des ceintures de synchronisation entre la poulie centrale et les poulies de sunchronisation droite et gauche.
(2) Tout en appliquant une tension sur le châssis et la plaquette de tension, tirer sur la ceinture de synchronisation.
(3) Fixer la plaquette de tension au châssis avec une vis ①.
(4) Tout en plaçant une plaquette plate tel qu'une règle entre les surfaces du menu, les aligner au même niveau.
(5) Fixer l'arbre de menu à la poulie de synchronisation en utilisant la clé hexagonale.
(6) Retirer la plaquette placée dans le menu et vérifier les points suivants en tournant le menu à la main.
  1. Vérifier que les trois surfaces du menu pivotent de façon régulière.
  2. Vérifier que les trois surfaces sont alignées au même niveau après une rotation de l'arbre du menu.

● **Réglage de la position d'arrêt de la rotation du menu**

PREPARATIFS

- Desserrer la vis Ⓐ maintenant le disque codeur en utilisant la clé hexagonale.
- Desserrer la vis Ⓐ maintenant la plaquette de réglage.
- Ajuster avec le moteur (menu) joint.

(1) Régler le jeu entre le disque codeur et le photointerrupteur du moteur (menu) á $1^{+0}_{-0,5}$ mm. (Fig. 7-2)
(2) Fixer la vis du disque codeur en la serrant à l'aide d'une clé hexagonale.
(3) Tourner la vis Ⓑ de manière à ce que le repère ciselé sur la plaquette de réglage soit alignée avec le châssis. Puis, serrer temporairement la vis Ⓐ.
(4) Pousser la touche ROTATE MENU sur le panneau avant de l'appareil principal de manière à faire tourner le menu. Effectuer, ensuite, les réglages suivants en fonction des conditions. (Fig. 7-3)
  - Lorsque le menu s'arrête en dépassant l'avant
    …… Desserrer la vis Ⓐ, puis serrer la vis Ⓑ en la tournant dans le sens des aiguilles d'une montre.
  - Lorsque le menu s'arrête avant d'atteindre l'avant
    …… Desserrer la vis Ⓐ, puis tourner la vis Ⓑ dans le sens contraire des aiguilles d'une montre pour la desserrer.
(5) Tourner le menu de nouveau, et serrer fermement la vis Ⓐ lorsqu'il s'arrête en dirigeant ses surfaces vers l'avant. (Fig. 7-4 ⓐ)
(6) Finalement, tourner le menu et vérifier qu'il s'arrête en dirigeant toutes ses trois surfaces vers l'avant à chaque rotation de 120°.

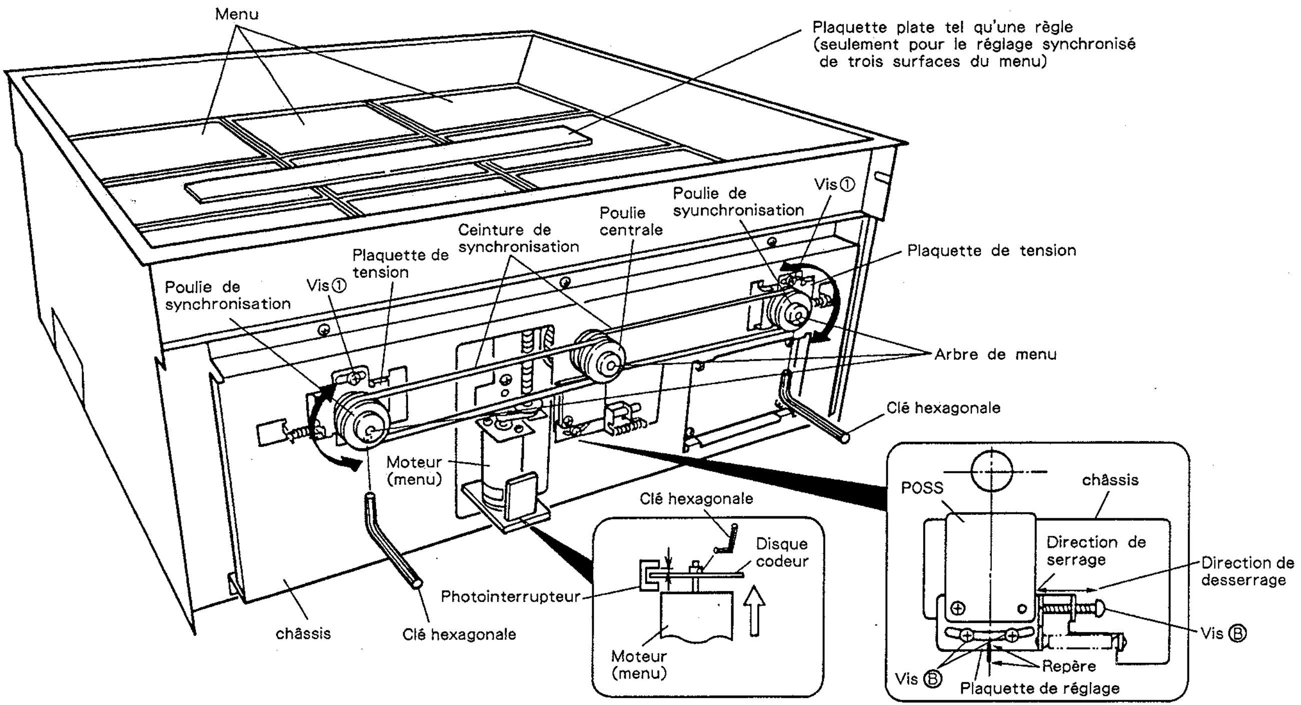
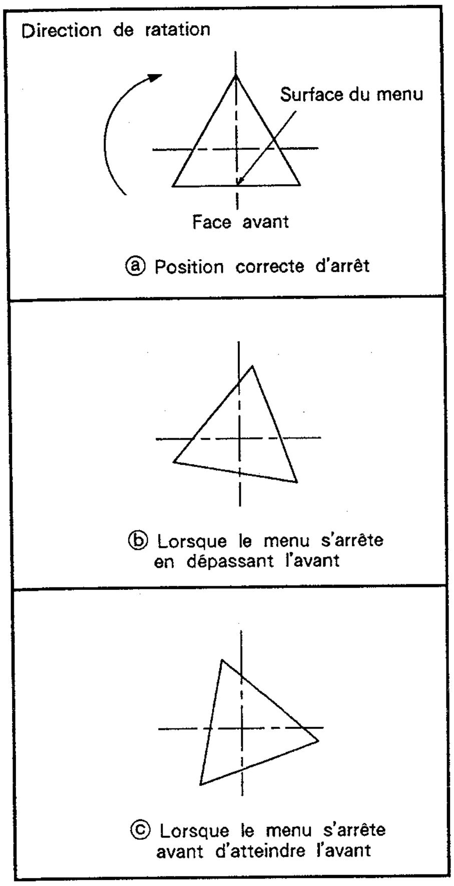

Menu
Plaquette plate tel qu'une règle (seulement pour le réglage synchronisé de trois surfaces du menu)
Poulie de syunchronisation
Vis①
Poulie centrale
Ceinture de synchronisation
Plaquette de tension
Plaquette de tension
Poulie de synchronisation
Vis①
Arbre de menu
Clé hexagonale
Moteur (menu)
Clé hexagonale
Disque codeur
Photointerrupteur
châssis
Clé hexagonale
Moteur (menu)
POSS
châssis
Direction de serrage
Direction de desserrage
Vis Ⓑ
Repère
Vis Ⓑ
Plaquette de réglage

Fig. 7-1

Fig. 7-2

Fig. 7-3


Direction de ratation
Surface du menu
Face avant

ⓐ Position correcte d'arrêt

ⓑ Lorsque le menu s'arrête en dépassant l'avant

ⓒ Lorsque le menu s'arrête avant d'atteindre l'avant

Fig. 7-4

7.1.2 SECTION CD

PREPARATIFS

- Mettre un magasin dans les première et sixième modules de l'appareil principal CD.
- Brancher la télécommande RU-V101 sur l'appareil principal CD.

1. Réglage approximatif de la position de sélection

(1) Régler le jeu entre le côté supérieur de la plaquette de détecteur et celui du châssis principal à 7 mm en serrant la vis Ⓐ.

2. Réglage de la position de sélection

(1) Procéder comme suit :

① Appuyer sur les touches par ordre $\boxed{1}$ + $\boxed{8}$ + STILL/STEP ⅠⅠ▶ (DISC SELECT) + STILL/STEP ◀ⅠⅠ (DISC RETURN). Après cette opération, vérifier que le jeu entre le haut du levier de rotation et le côté supérieur du sixième plateau dans le magasin est de $0.3^{+0.2}_{-0}$.

② Si le jeu est hors de la gamme spécifiée, tourner la vis Ⓐ pour régler la position de la plaquette de détecteur, et appuyer de nouveau sur les touches par ordre $\boxed{1}$ + $\boxed{8}$ + STILL/STEP ⅠⅠ▶ (DISC SELECT) + STILL/STEP ◀ⅠⅠ (DISC RETURN) de façon que le jeu soit dans la gamme spécifiée.

③ Appuyer sur les touches par ordre $\boxed{6}$ + STILL/STEP ⅠⅠ▶ (DISC SELECT) + STILL/STEP ◀ⅠⅠ (DISC RETURN), et vérifier que le jeu entre le haut du levier de rotation et le côté supérieur du sixième plateau dans le magasin est de 0.3mm ± 0.1mm.

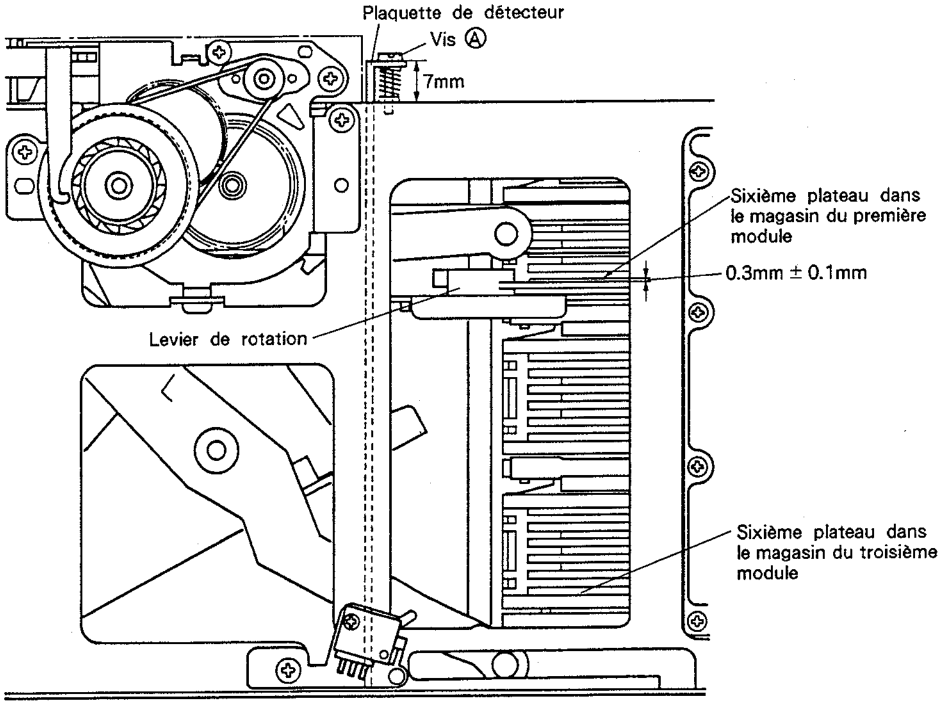

Plaquette de détecteur
Vis Ⓐ
7mm
Sixième plateau dans le magasin du première module
0.3mm ± 0.1mm
Levier de rotation
Sixième plateau dans le magasin du troisième module

Fig. 7-5

7.2 RÉGLAGES ELECTRIQUESS

Les réglages pour ce modèle doivent être réalisés dans l'ordre indiqué ci-dessous.

• Réglages et vérifications à effectuer

1. Réglages de l'offset de centrage de piste, de l'offset de focalisation et de l'offset RF.
2. Réglage du niveau RF
3. Vérification de la puissance de sortie de la diode laser (LD)
4. Vérification du verrouillage de focalisation et du verrouillage de moyeu
5. Réglage du réseau
6. Réglage de l'équilibrage de centrage de piste
7. Réglage tangentiel
8. Réglage du gain de focalisation
9. Réglage du gain de centrage de piste
10. Réglage de la fréquence propre du VCO
11. Methode de contrôle de la caractéristique S (erreur de focalisation)

• Matériel de mesure

1. Oscilloscope double trace
2. Appareil de mesure pour puissance laser
3. Disque d'essai (YEDS-7)
4. Filtre de réglage pour équilibrage de centrage de piste
5. Filtre de réglage pour gain de boucle
6. Générateur de signal
7. Fréquencemètre
8. Outillage général divers
9. Télécommande (RU-V101)

• Mode d'entretien

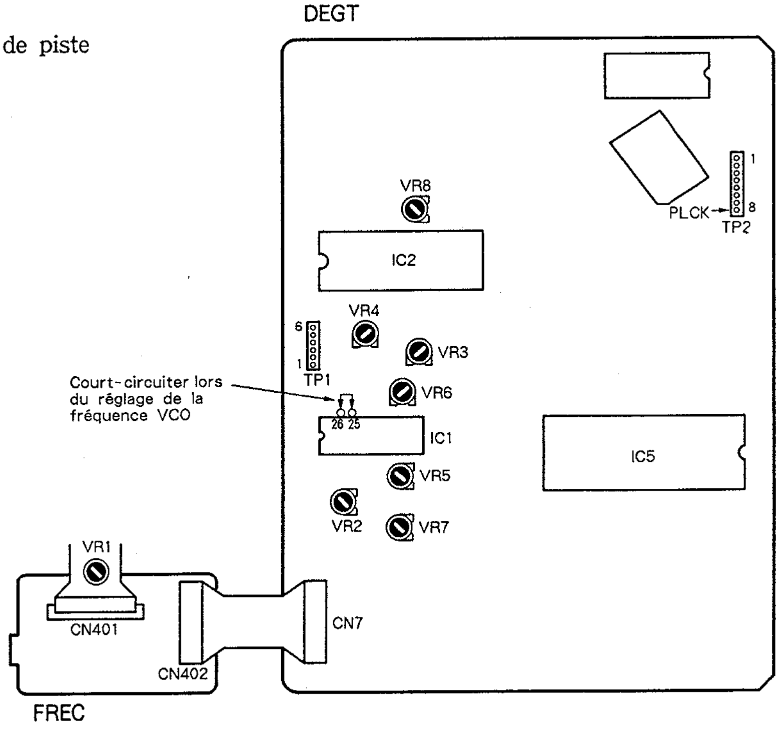
L'appareil principal CD peut être fonctionné indépendamment quand la télécommande RU-V101 est branchée sur l'appareil. Pour les détails sur le fonctionnement, voir "Mode d'entretien" (page 14) du manuel d'entretien (1) (ARP2047).

Remarque :

Avant le fonctionnement avec la télécommande RU-V101, déplacer le mécanisme à la position où le disque d'essai est placé en appuyant sur une des touches numériques et la touche STILL/STEP ▮▶ (DISC SELECT).

• Dispositifs d'ajustement et nomenclature

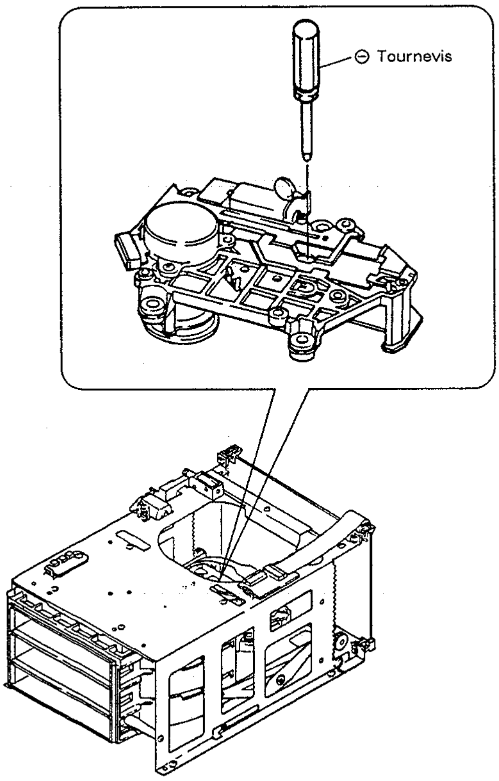
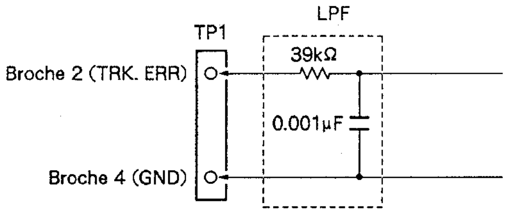
VR1 : Puissance laser
VR2 : Offset RF (RF. OFS)
VR3 : Gain de focalisation (FCS. GAN)
VR4 : Gain de centrage de piste (TRK. GAN)
VR5 : Equilibrage de centrage de piste (TRK. BAL)
VR6 : Décalage de focalisation (FCS. OFS)
VR7 : Décalage de centrage de piste (TRK. OFS)
VR8 : Réglage du VCO (VCO. ADJ)



Court-circuiter lors du réglage de la fréquence VCO

Fig. 7-6 Point de réglage

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Methode de réglage
	V	H				
1	**RÉGLAGES DE L'OFFSET DE CENTRAGE DE PISTE, DE L'OFFSET DE FOCALISATION ET DE L'OFFSET RF**					
				VR5 (TRK. BAL)	Offset de centrage de piste 45°	● Régler le mode d'essai (TEST). ● Tourner le potentiomètre VR5 TRK. BAL (équilibrage de centrage de piste) de 45° depuis le centre dans le sens des aiguilles d'une montre.
			TP1 Broche 2 (TRK. ERR)	VR7 (TRK. OFS)	0V ± 50mV	● Ajuster le potentiomètre VR7 TRK. OFS (décalage de centrage de piste) de facon à ce que la tension à la broche 2 TRK. ERR (erreur de centrage de piste) de TP1 devienne égale à 0 V ± 50 mV.
			TP1 Broche 6 (FCS. ERR)	VR6 (FCS. OFS)	Offset de focalisation 0V ± 50mV	● Régler VR6 FCS. OFS (offset de focalisation) de manière à ce que la tensiton de FCS. ERR (erreur de focalisation) relevée sur la broche 6 de TP1 soit de 0 V ± 50 mV.
			TP1 Broche 1 (RF OUTPUT)	VR2 (RF. OFS)	Offset RF 100mV ± 50mV	● Régler VR2 RF. OFS (offset RF) de manière à ce que la tension de RF OUTPUT (sortie RF) relevée sur la broche 1 de TP1 soit de 100 mV ± 50 mV.
2	**RÉGLAGE DU NIVEAU RF**					
			TP1 Broche 1 (RF)			● Régler le mode d'essai (TEST). ● Reproduire le disque d'essai (TEST) et raccorder la sonde d'un oscilloscope à la broche 1 RF (sortie RF) de TP1 et mesurer la tension C-C de la forme d'onde RF.
				VR1 Puissance laser	1,5 Vc-c $^{+0,2V}_{-0V}$	● Régler VR1 (puissance laser) de façon que la tension soit de 1,5 Vc-c $^{+0,2V}_{-0V}$.
3	**VÉRIFICATION DE LA PUISSANCE DE SORTIE DE LA DIODE LASER (LD)**					
						● Régler le mode d'essai (TEST). ● Appuyer sur la touche de centrage de piste arrière [−MULTI-SPEED+]+[0] et enclencher la diode laser (LD).
					Confirmation : moins de 0,13mW	● Placer la capteur de l'instrument destiné à mesurer la puissance laser au dessus de l'objectif et vérifier que la puissance de sortie de la diode laser (LD) est inférieure à 0,13 mW.
4	**VÉRIFICATION DU VERROUILLAGE DE FOCALISATION ET DU VERROUILLAGE DE MOYEU**					
						● Mettre en place le disque d'essai (TEST). ● Régler le mode d'essai (TEST). ● Déplacer la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche [−MULTI-SPEED+]+[4]. * Cette étape doit absolument être réalisée.
	0,5V/div	100msec /div	TP1 Broche 1 (Sortie RF)		Présence de sortie RF	● Observer le signal RF à la broche 1 de TP1 (sortie RF) au moyen d'un oscilloscope et vérifier que le signal RF sorte après l'enfoncement de la touche d'avance de piste [−MULTI-SPEED+]+[1].
					Rotation normale	● Appuyer sur la touche de lecture [−MULTI-SPEED+]+[2] et s'assurer que le disque tourne en sens normal avec approximativement la vitesse spécifiée (étant près du centre du disque, la vitesse de rotation est d'environ 300 tr/mn), sans anomalie ni inversion du sens de rotation.

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
5	**RÉGLAGE DU RÉSEAU**					
	 Fig. 7-7					● Régler le mode d'essai (TEST). ● Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant [−MULTI-SPEED+]+[4], de façon à ce que la vis de réglage du réseau de la tête de lecture puisse être vue à travers le trou oval situé à la partie supérieure de l'asservissement. ● Insérer un ⊖ tournevis dans le trou de réglage depuis la partie supérieure du mécanisme, comme illustré à la figure 7-7, puis vérifier que la vis de réseau tourne. ● Appuyer séquentiellement sur les touches de piste avant [−MULTI-SPEED+]+[1] et [−MULTI-SPEED+]+[2], et fermer les asservissements de focalisation et de moyeu. (Ne pas fermer l'asservissement de centrage de piste.) ● Observer la forme d'onde à la broche 2 TRK. ERR (erreur de centrage de piste) de TP1 au moyen d'un oscilloscope. Introduire alors un filtre de coupure passe-bas 4 kHz. (Fig. 7-8)  LPF TP1 39kΩ Broche 2 (TRK. ERR) 0.001μF Broche 4 (GND) Fig. 7-8
	0,5V/div	5msec /div	TP1 Broche 2 (TRK. ERR)	Réseau Réseau	Point zéro Amplitude maximum	● Faire touner un ⊖ tournevis et rechercher le point zéro. (Photo 7-1) ● Tourner ensuite lentement dans le sens contraire des aiguilles d'une montre le ⊖ tournevis depuis le point zéro et l'ajuster sur le point où la forme d'onde (signal d'erreur de centrage de piste) présente une première amplitude maximum. (Voir photo 7-2.) Note : Si le ⊖ tournevis est appuyé avec force, la tête de lecture se déplace vers le centre du disque et le réglage devient difficile à effectuer. ● Finalement, s'assurer que le signal d'erreur de centrage de piste (cette fois-ci le filtre de coupure passe-bas à 4kHz n'est pas introduit) n'a pas beaucoup varié lorsque la tête de lecture est déplacée vers le centre du disque, et aussi que la tension C-C du signal de centrage de piste n'a pas non plus beaucoup varié sur la circonférence extérieure du disque. Lorsque le niveau varie de plus de ±10%, recommencer le réglage en tournant la vis de réseau jusqu'au point d'amplitude d'erreur maximum.

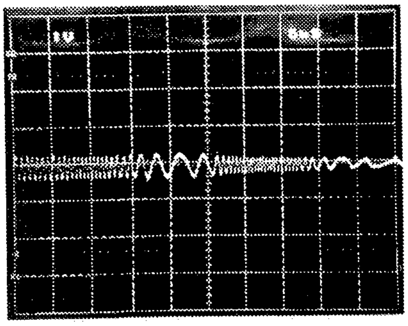


Photo. 7−1
Point nul

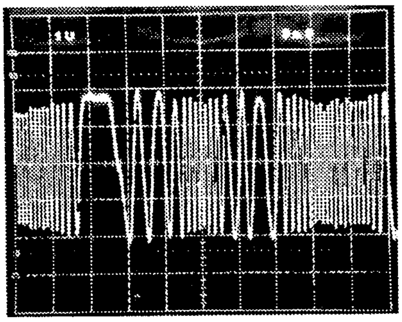


Photo. 7−2
Amplitude maximale

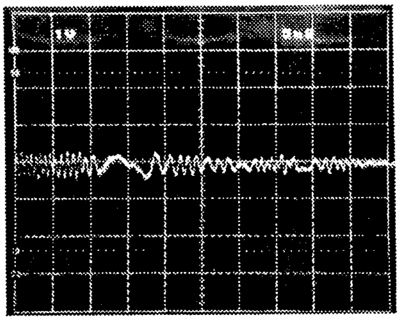
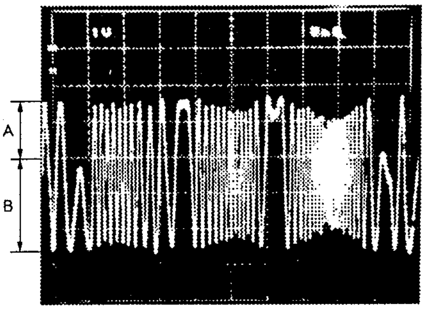
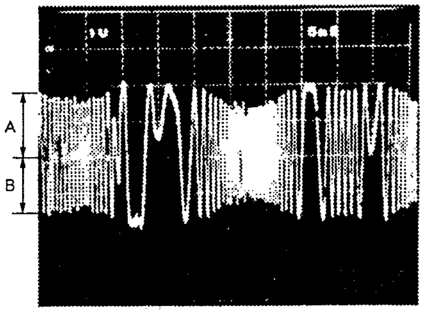
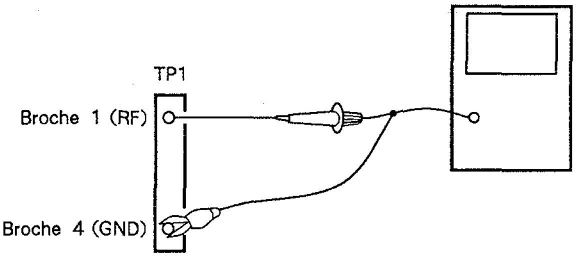
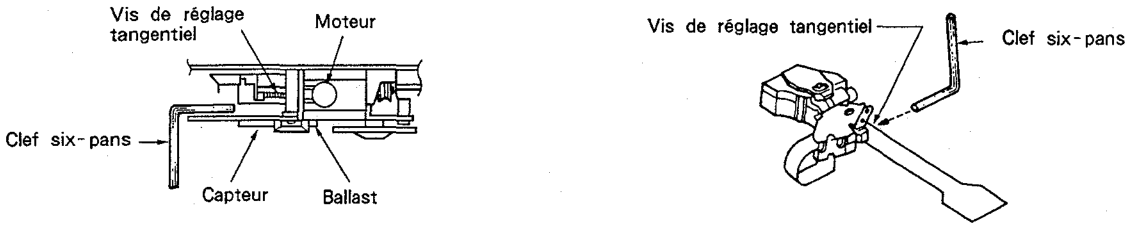


Photo. 7−3
Ceci n'est pas la forme d'onde du point nul

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
6	**RÉGLAGE DE L'EQUILIBRAGE DE CENTRAGE DE PISTE**					
	0,5V/div	5msec /div	TP1 Broche 2 (TRK. ERR)	VR5 (TRK. BAL)	TRK. ERR	● Mettre en place le disque d'essai (TEST). ● Régler le mode d'essai (TEST). ● Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant [−MULTI-SPEED+]+[4]. ● Appuyer sur la touche de piste avant [−MULTI-SPEED+]+[1] et sur la touche de lecture [−MULTI-SPEED+]+[2] pour faire tourner le disque. ● Observer la broche 2 TRK. ERR (erreur de centrage de piste) de TP1 au moyen d'un oscilloscope et ajuster au moyen de potentiomètre VR5 TRK. BAL (équilibrage de centrage de piste) de façon à ce que la composante continue de l'erreur de centrage de piste disparaisse. Note : Avant de procéder aux ajustements ci-dessus, veiller à régler le décalage d'erreur de piste.
	 Photo. 7−4 Eléments CC mêlés au signal				 Photo. 7−5 Eléments CC éliminés	

Pas No.	Réglage de l'oscilloscope		Points d'essai	Pointe de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
7	RÉGLAGE TANGENTIEL					
		200nsec / div	TP1 Broche 1 (sortie RF)	Vis de réglage tangentiel	Mire Best Eye	● Mettre en place le disque d'essai (TEST) ● Régler le mode d'essai (TEST). ● Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant −MULTI-SPEED+ +4. ● Appuyer séquentiellement sur les touches d'avance de piste −MULTI-SPEED+ +1, −MULTI-SPEED+ +2 et −MULTI-SPEED+ +3, et fermer tous les asservissements. (Le voyant de pause s'allume.) ● Observer le signal RF à la broche 1 (sortie RF) de TP1 au moyen d'un oscilloscope et régler au moyen de la vis tangentielle, de façon à ce que la mire Best Eye devienne claire. (Fig. 7-9 et 7-10) ● Le point de réglage se situe au milieu entre le point ou la mire se détériore en tournant la vis tangentielle dans le sens des aiguilles d'une montre et le point où la mire se détériore en tournant la vis tangentielle dans le sens inverse des aiguilles d'une montre. Comme critère, observer que la forme d'onde globale soit claire et que l'une des formes de losange se situe dans la mire (Photo 7-7) ; réaliser le réglage en un point optimum où la forme de losange apparaît avec des traits relativement fins.  Fig. 7-9 Note : Pendant le réglage, tenir la clef six-pans vers le haut de façon à ce que le corps de la tête de lecture ne descende pas.



Dans l'illustration ci-dessous, le dessus et le dessous de l'appareil sont en réalité à l'envers.

Fig. 7-10 Réglage tangentiel

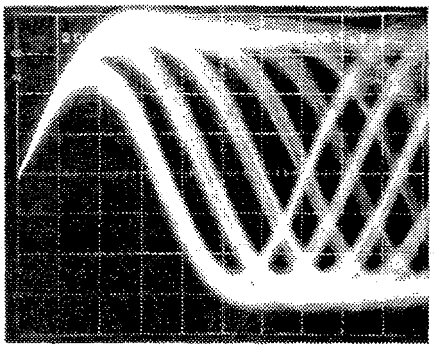


Photo. 7-6

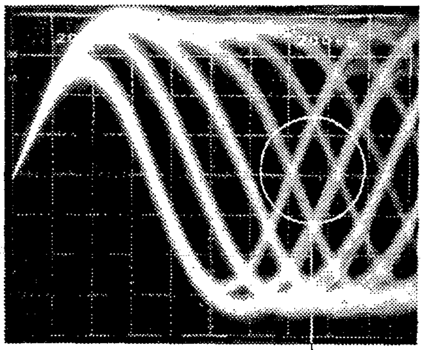


Photo. 7-7

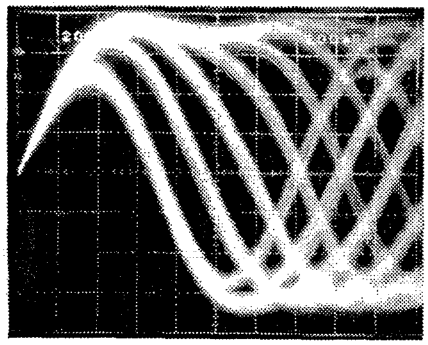
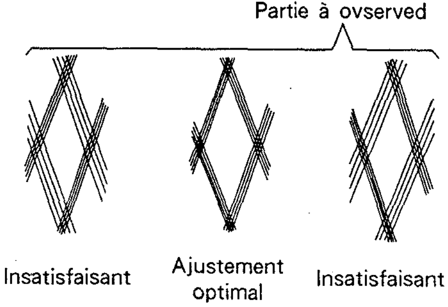
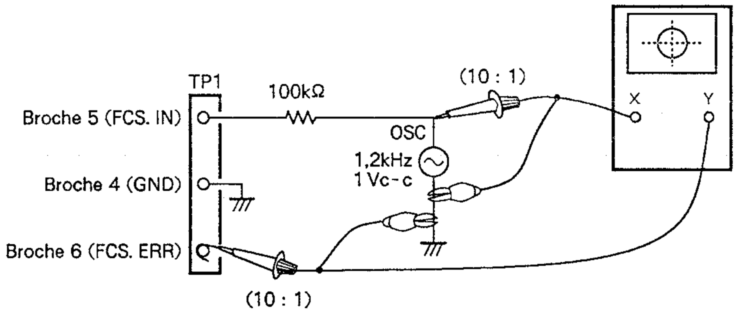


Photo. 7-8


Partie à ovserved
Insatisfaisant
Ajustement optimal
Insatisfaisant

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
8	**RÉGLAGE DU GAIN DE FOCALISATION**					
	20mV/div, 5mV/div. Canal 1 (X), Canal 2 (Y) (Sonde 10 : 1)		Axe X : TP1 Broche 5 (FCS. IN) Axe Y : TP1 Broche 6 (FCS. ERR)	VR3 (FCS. GAN)	Différence de phase 90°	● L'alimentation étant coupée (POWER OFF), raccorder un oscilloscope et un oscillateur de la manière indiquée à la figure 7-11. ● Régler l'appareil en mode de lecture normale. ● Enclencher l'alimentation de l'oscillateur et délivrer un signal de 1,2 kHz a 1 Vc-c. Note: En fonction de l'oscillateur utilisé, certains appareils fournissent un courant continu lors de leur enclenchement. Par conséquent, il est préférable de raccorder l'oscillateur après avoir enclenché son alimentation. ● Ajuster le potentiomètre VR3 FCS. GAN (gain de focalisation) de façon à ce que la figure de Lissajou observée sur l'osciloscope devienne un cercle horizontal (déphasage 90°).  TP1 100kΩ (10 : 1) X Y Broche 5 (FCS. IN) OSC 1,2kHz 1 Vc-c Broche 4 (GND) Broche 6 (FCS. ERR) (10 : 1) Fig. 7-11

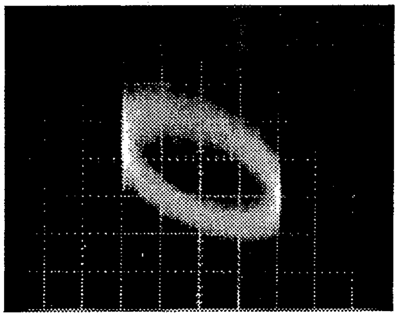


Photo. 7-9
Gain sur-compensé

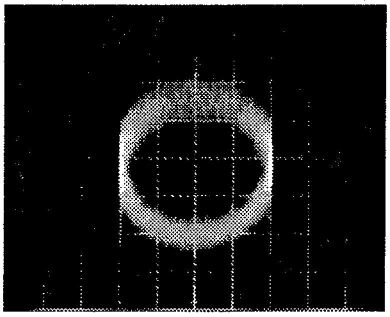


Photo. 7-10
Gain optimal

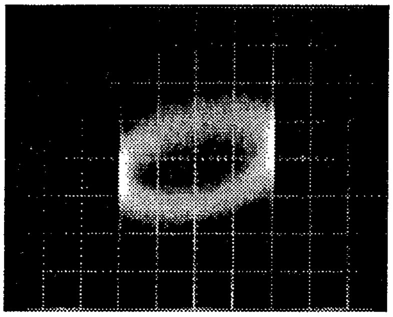
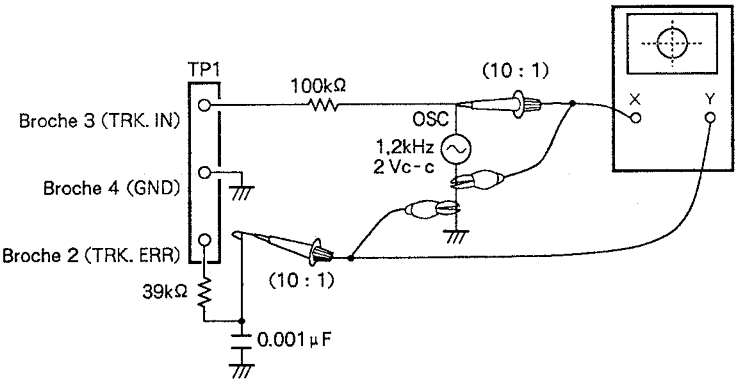


Photo. 7-11
Gain sous-compensé

Pas No.	Réglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
9	**RÉGLAGE DU GAIN DE CENTRAGE DE PISTE**					
	50mV/div, 5mV/div. Canal 1 (X), Canal 2 (Y) (Sonde 10 : 1)		Axe X : TP1 Broche 3 (TRK. IN) Axe Y : TP1 Broche 2 (TRK. ERR)	VR4 (TRK. GAN)	Déphasage 90°	● L'alimentation étant coupée (POWER OFF), raccorder un oscilloscope et un oscillateur de la manière indiquée à la figure 7-12. ● Régler l'appareil en mode de lecture normale. ● Enclencher l'alimentation de l'oscillateur et fournir un signal de 1,2 kHz à 2 Vc-c. Note : En fonction de l'oscillateur utilisé, certains appareils fournissent un courant continu lors de leur enclenchement. Par conséquent, il est préférable de raccorder l'oscillateur après avoir enclenché son alimentation. ● Ajuster le potentiomètre VR4 TRK GAN (gain de centrage de piste) de façon à ce que la figure de Lissajou sur l'oscilloscope devienne un cercle horizontal (déphasage 90°).  TP1 100kΩ (10 : 1) X Y Broche 3 (TRK. IN) OSC 1,2kHz 2 Vc-c Broche 4 (GND) Broche 2 (TRK. ERR) (10 : 1) 39kΩ 0.001 μF Fig. 7-12

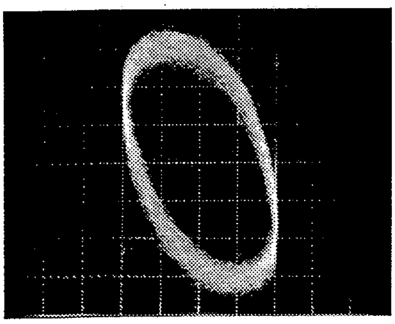


Photo. 7-12
Gain sur-compensé

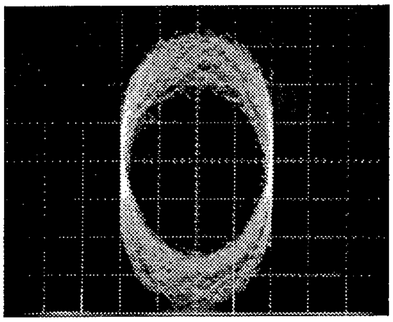


Photo. 7-13
Gain optimal

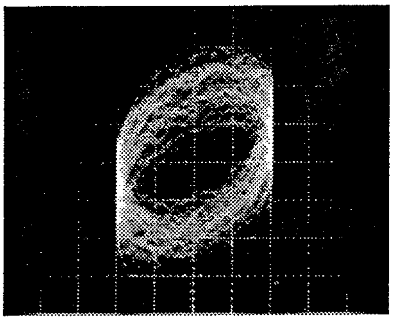


Photo. 7-14
Gain sous-compensé

Pas No.	Reglage de l'oscilloscope		Points d'essai	Points de réglage	Points de contrôle / spécifications de réglage	Méthode de réglage
	V	H				
10	**RÉGLAGE DE LA FRÉQUENCE PROPRE DU VCO**					
			TP2 Broche 8 (PLCK)	VR8 (VCO. ADJ)	4,275 ± 0,01MHz	● Régler le mode d'essai (TEST). ● Court-circuiter entre broches 25 et 26 de l'IC1 dans l'assemblage DEGT à l'aide d'un ⊖ tournevis. ● Reccorder un fréquencemètre capable de mesurer audessus de 10 MHz à la broche 8 de TP2 (PLCK). ● Ajuster le potentiomètre VR8 VCO ADJ (réglage du VCO) de façon à ce que la valeur indiquée par le fréquencemètre devienne égale à 4,275 ± 0,01MHz.
11	**MÉTHODE DE CONTRÔLE DE LA CARACTÉRISTIQUE S (ERREUR DE FOCALISATION)**					
			TP1 Broche 6 (FCS. ERR)			● Régler le mode d'essai (TEST). ● Réaliser un court-circuit entre la broche 5 FCS. IN (entrée de focalisation) de TP1 et la terre GND. ● Appuyer sur la touche d'avance de piste $\boxed{-\text{MULTI-SPEED}+}+\boxed{1}$ et observer simultanément la forme d'onde à la broche 6 FCS. ERR (erreur de focalisation) de TP1 au moyen d'un oscilloscope.

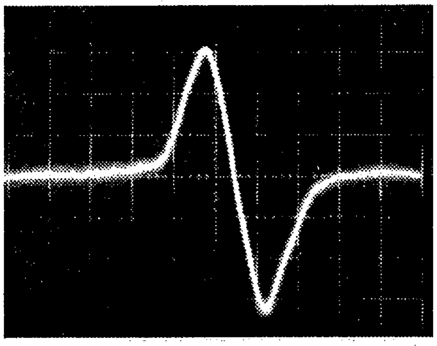


Photo. 7-15 Erreur de mise au point

7. AJUSTES

7.1 AJUSTES MECÁNICOS

7.1.1 SECCIÓN PRINCIPAL

● Tres lados de ajuste sincrónico del menú (Fig. 7-1)

PREPARATIVOS

- Ajuste sin instalar el motor (menú).
- Fije la polea central al eje del menú con los tornillos.

(1) Aplique la correa de sincronización entre la polea de sincronización y la polea central en ambos lados, derecho e izquierdo.

(2) Aplicando resorte (tensión) al armazón inferior y la placa tensora, aplique tensión a la correa de sincronización.

(3) Fije la placa tensora en el armazón inferior con un tornillo ①.

(4) Colocando una placa plana, como una regla, entre ellas, alinee las tres superficies del menú entre sí de forma que queden al mismo nivel.

(5) Fije el eje de menú en la polea de sincronización empleando una llave hexagonal.

(6) Extraiga la placa colocada sobre el menú y compruebe los ítemes siguientes girando manualmente el menú.

1. Compruebe si las tres superficies del menú giran sin interrupción brusca.
2. Comprube si todas las tres superficies del menú alineen entre sí de forma que queden al mismo nivel después de girar el eje del menú una vez.

●Ajuste de la posición de parada de la rotación del menú

PREPARATIVOS

- Alfoje el tornillo Ⓐ que sostiene el disco decodificador con una llave hexagonal.
- Afloje el tornillo Ⓐ que sostiene la placa de ajuste.
- Ajuste con el motor (menú) instalado.

(1) Ajuste la separación entre el disco decodificador y el interruptor fotoeléctrico del motor (menú) a $1^{+0}_{-0.5}$ mm. (Fig. 7-2)

(2) Fije el tornillo del disco decodificador apretándolo con una llave hexagonal.

(3) Gire el tornillo Ⓑ de forma que la marca grabada en la placa de ajuste quede alineada con el armazón inferior. Después apriete temporalmente el tornillo Ⓐ.

(4) Presione la tecla ROTATE MENU del panel frontal de la unidad principal para que el menú gire. Después realice los ajustes siguientes dependiendo de la condición. (Fig. 7-3)

- Cuando el menú se pare después de haber pasado la parte frontal
  ······ Afloje el tornillo Ⓐ y apriete el tornillo Ⓑ girándolo hacia la derecha.
- Cuando el menú se pare antes de llegar a la parte frontal
  ······ Afloje el tornillo Ⓐ y gire el tornillo Ⓑ hacia la izquierda para aflojarlo.

(5) Vuelva a girar el menú y apriete firmemente el tornillo Ⓐ cuando el menú se pare dirigiendo sus superficies hacia la parte frontal. (Fig. 7-4 ⓐ)

(6) Finalmente, gire el menú y compruebe si se para dirigiendo sus tres superficies hacia la parte frontal cada 120° de rotación.

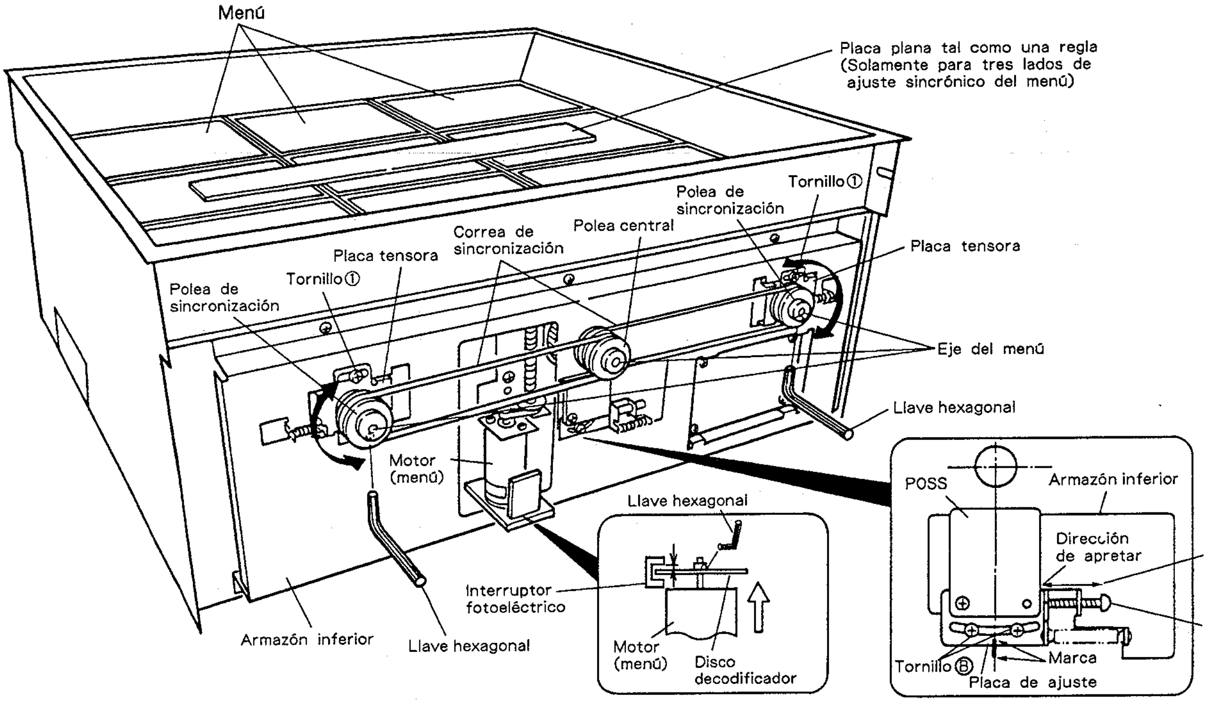
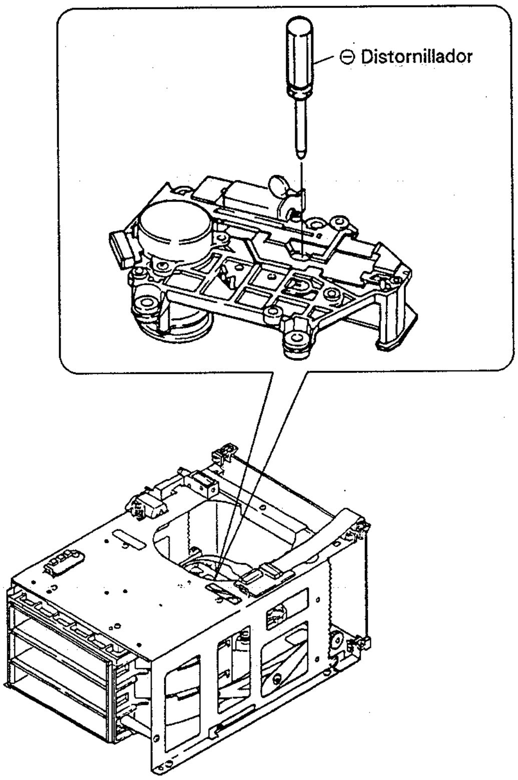
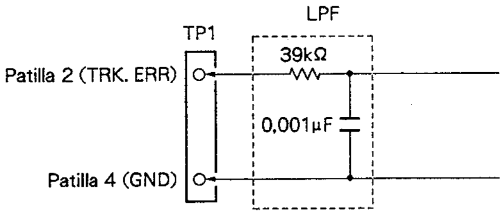

Menú
Placa plana tal como una regla
(Solamente para tres lados de ajuste sincrónico del menú)
Polea de sincronización
Tornillo①
Correa de sincronización
Polea central
Placa tensora
Tornillo①
Polea de sincronización
Placa tensora
Eje del menú
Llave hexagonal
Motor (menú)
Armazón inferior
Llave hexagonal
Interruptor fotoeléctrico
Llave hexagonal
Motor (menú)
Disco decodificador
POSS
Armazón inferior
Dirección de apretar
Dirección de aflojar
Tornillo Ⓑ
Tornillo Ⓑ
Marca
Placa de ajuste

Fig. 7-1

Fig. 7-2

Fig. 7-3

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
1	**AJUSTES DE LA DESVIACIÓN DE SEGUIMIENTO, FOCO Y RF**					
						● Ajuste el modo de TEST.
				VR5 (TRK. BAL)	Desviación de seguimiento 45 é	● Gire el volumen de TRK. BAL (Equilibrio de seguimiento) de VR5 en el sentido de las menecillas del reloj 45° del centro.
			Patilla 2 de TP1 (TRK. ERR)	VR7 (TRK. OFS)	0V ± 50mV	● Ajuste VR7 TRK. OFS (de seguimiento) de modo que el voltaje en TRK. ERR (desviación de seguimiento) de la patilla 2 de TP1 se ponga en 0V ± 50 mV.
			Patilla 6 de TP1 (FCS. ERR)	VR6 (FCS. OFS)	Compens. de foco 0V ± 50mV	● Ajuste VR6 FCS. OFS (compensación de foco) de modo que el voltaje de FCS. ERR) error de foco) en la patilla 6 de TP1 sea 0V ± 50mV.
			Patilla 1 de TP1 (RF OUTPUT)	VR2 (RF. OFS)	Compens. de RF 100mV ± 50mV	● Ajuste VR2 RF. OFS (compensación de RF) de modo que el voltaje de salida de RF en la patilla 1 de TP1 sea 100 mV ± 50 mV.
2	**AJUSTE DEL NIVEL DE RF**					
						● Ajuste el mode de TEST.
			Patilla 1 de TP1 (RF)			● Reproduzca el disco de TEST y conecte la sonda de un osciloscopio a la RF de la patilla 1 (Sailda de RF) de TP1 y mida el voltaje de P-P de la forma de onda de RF.
				Alimentación del laser VR1	1,5Vp-p $^{+0,2V}_{-0V}$	● Ajuste VR1 (alimentación del láser) que el valor sea 1,5Vp-p$^{+0,2V}_{-0V}$.
3	**CONFIRMACIÓN DE LA ALIMENTACIÓN DE SALIDA DE LD (DIODO LÁSER)**					
						● Ajuste el modo de TEST.
						● Presione la tecla de $\boxed{\text{−MULTI-SPEED+}}$+$\boxed{0}$ y encienda el LD (Diodo láser).
					Confirmación Menos de 0,13mW	● Ubique el sensor del medidor de potencia del láser inmediatamente arriba del objetivo, y confirme que la potencia de salida del LD sea menos de 0,13 mW.
4	**CONFIRMACIÓN DE ENCLAMIENTO DEL ENFOQUE Y DEL EJE**					
						● Ajuste del disco de TEST.
						● Ajuste del mode de TEST.
						● Cambie el captador cerca del centro del disco presionando la tecla de $\boxed{\text{−MULTI-SPEED+}}$+$\boxed{4}$.
						* Tenga en cuenta que este paso deberá ser ejecutado.
	0,5V/div	100mseg /div	Patilla 1 de TP1 (Salida de RF)		Existe salida de RF	● Observe RF (Radio frecuencia) de la patilla 1 de TP1 con un osciloscopio y confirme que se saque la senñal de RF después de presionar la tecla de $\boxed{\text{−MULTI-SPEED+}}$+$\boxed{1}$.
					Rotación normal	● Presione la tecla de $\boxed{\text{−MULTI-SPEED+}}$+$\boxed{2}$ y asegúrese que el disco rota en la dirección normal casi a la velocidad especificada (tal como está cerca del centro del disco, la velocidad de rotación es alrededor de 300 rpm) y que no rote anormalmente o inversamente.

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
5	**AJUSTE DEL RETÍCULO**					
	 Fig. 7-7					● Ajuste el mode TEST. ● Cambie el captador cerca del centro del disco presionando la tecla de [−MULTI-SPEED+]+[4] de modo que el tornillo de ajuste de retículo del captador pueda ser visto a travês del orificio oval en el lado superior del servomecanismo. ● Inserte un ⊖ destornillador en el orificio del lado superior or del mecanismo come se muestra en la Fig. 7-7, y confirme que gira el tornillo de retículo. ● Presione la tecla de [−MULTI-SPEED+]+[1] y [−MULTI-SPEED+]+[2] secuencialmente y cierre el servo de enfoque y el del eje. (No cierre el servo de seguimiento.) ● Observe la forma de onda en TRCK. ERR (Error de seguimiento) de la patilla 2 de TP1 con un osciloscopio. Luego inserte un filtro de paso bajo de corte. (Fig. 7-8)  LPF TP1 39kΩ Patilla 2 (TRK. ERR) 0,001μF Patilla 4 (GND) Fig. 7-8
	0,5V/div	5mseg /div	Patilla 2 de TP1 (TRK. ERR)	Retículo Retículo	Punto cero Amplitud máxima	● Gire el ⊖ destornillador y encuentre el punto cero. (Foto. 7-1) ● Luego, gire lentamente el ⊖ destornillador hacia **el seutido contrario del reloj** desde el punto cero y ajuste en el punto donde la forma de onda (Senñal de error de seguimiento) primeramente se ponga a una amplitud máxima. (Vea Foto. 7-2) Nota : Si el ⊖ destornillador se presiona fuertemente, el captador se mueve hacia el centro del disco, por consiguiente el ajuste resulta difícil. ● Finalmente, asegûrese de confirmar que la señal de error de seguimiento (en este momento, no se ha insertado el filtro de paso bajo de corte de 4 kHz) cuando el captador se mueve hacia el centro del disco y el voltaje de P-P do la señal de error de seguimiento en la circunferencia exterior del disco no haya variado considerablemente. Cuando se desvía el nival arriba de ±10%, ajuste de nuevo girando el tornillo de retículo a un punto de amplitud de error mínimo.

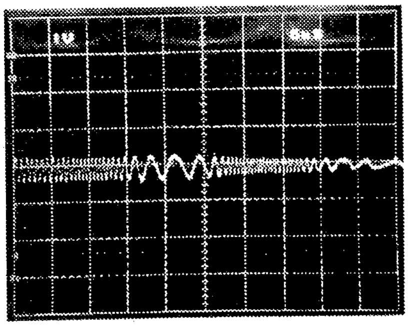


Foto. 7-1
Punto nulo

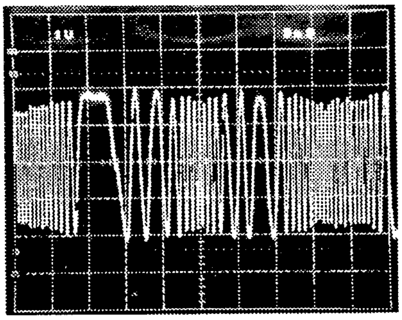


Foto. 7-2
Amplitud máxima

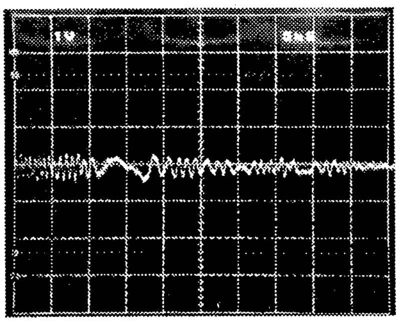


Foto. 7-3
Esta no es la forma de onda de punto nulo

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
6	**AJUSTE DEL EQUILIBRIO DE SEGUIMIENTO**					
	0,5V/div	5mseg / div	Patilla 2 de TP1 (TRK. ERR)	VR5 (TRK. BAL)	TRK. ERR	● Ajuste el disco de TEST. ● Ajuste el mode de TEST. ● Cambie el captador cerca del centro del disco presionando la tecla de [−MULTI-SPEED+]+[4]. ● Presione la tecla de [−MULTI-SPEED+]+[1] y la tecla de [−MULTI-SPEED+]+[2] para comenzar a voltear el disco. ● Obseve TRK. ERR (Error de sequimiento) de la patilla 2 de TP1 con un osciloscopio y ajuste con el volumen de TRK. BAL (Equilibrio de seguimiento) de VR5 de modo que la componente de CC del error de seguimiento desaparezca. Nota : Antes de realizar los ajustes indicados arriba, asegúrese de compensar el error de seguimiento.

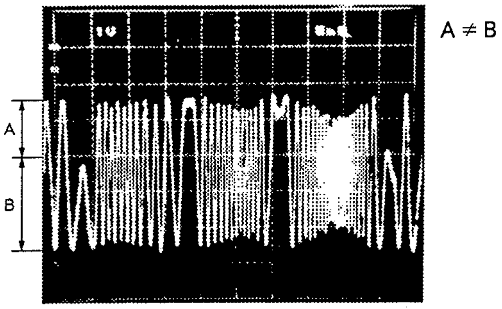


Foto. 7-4
Elementos de CC mezclados en la señal

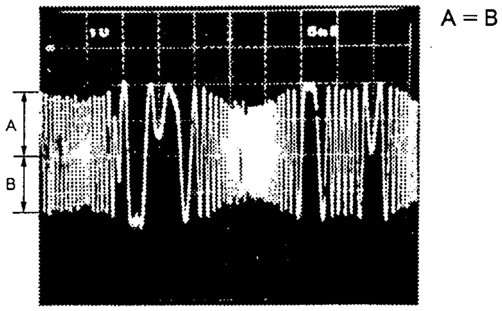
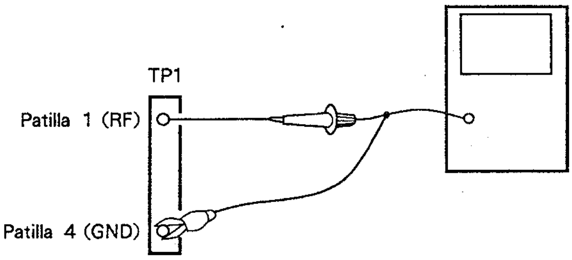
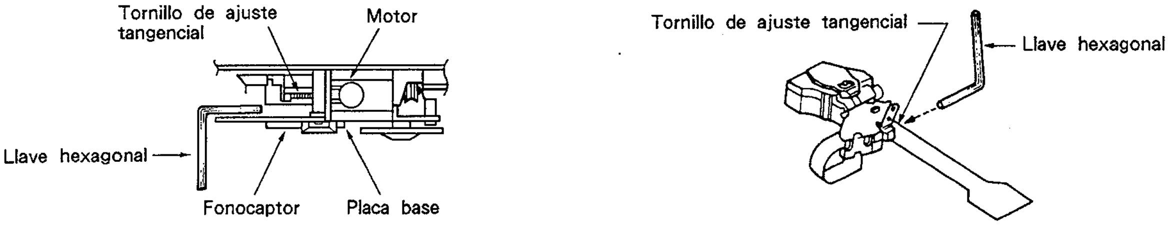


Foto. 7-5
Elementos de CC eliminados

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
7	**AJUSTE TANGENCIAL**					
		200nseg /div	Patilla 1 de TP1 (Salida de RF)	Tornillo de ajuste de la tangencial	Mejor imagen de prueba	● Ajuste el disco de TEST. ● Ajuste el mode de TEST. ● Cambie el carro cerca del centro del disco presionando la tecla de [−MULTI-SPEED+]+[4]. ● Presione la tecla de [−MULTI-SPEED+] +[1], [−MULTI-SPEED+] +[2] y [−MULTI-SPEED+] +[3] secuencialmente, y cierre todos los servos. (El indicador de pausa se enciende.) ● Observe el RF de la patilla 1 (Salida de RF) de TP1 con un osciloscopio y ajuste con el tornillo de la tangencial de modo que la imagen de prueba resulte nítida. (Fig. 7-9 y 7-10) ● El punto de ajuste es el punto medio entre el punto donde la imagen de prueba se deteriora girando el tornillo de la tangencial en el sentido de las manecillas del reloj, y el punto donde la imagen de prueba se deteriora girando el tornillo de la tangencial en contra del sentido de las menecillas del reloj. Como un criterio, observe que la forma de onda en conjunto sea nítida y que una de las figuras de diamante esté dentro de la imagen de prueba (Foto. 7-7), y ajuste al punto óptimo donde la forma de diamante se vea relativamente como una línea fina.  Fig. 7-9 (Nota) Durante el ajuste, sostenga la llave hexagonal hacia arriba para evitar que el cuerpo del captador vaya hacia abajo.



En la figura siguiente, las partes superior e inferior son opuestas a las del producto real.

Fig. 7-10 Ajuste tangencial

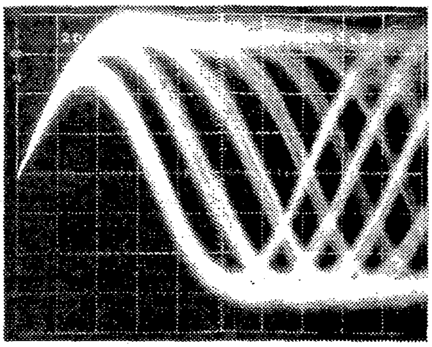


Foto. 7-6

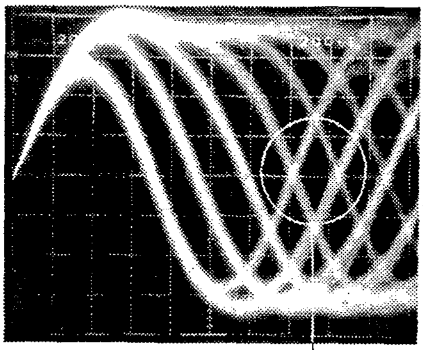


Foto. 7-7

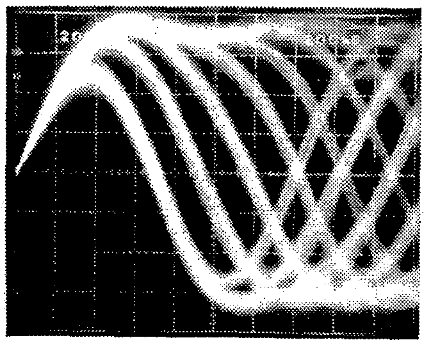
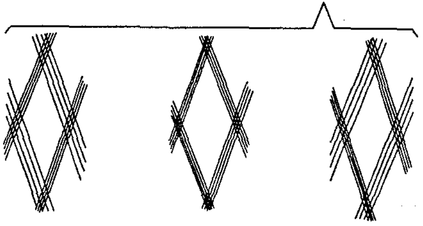
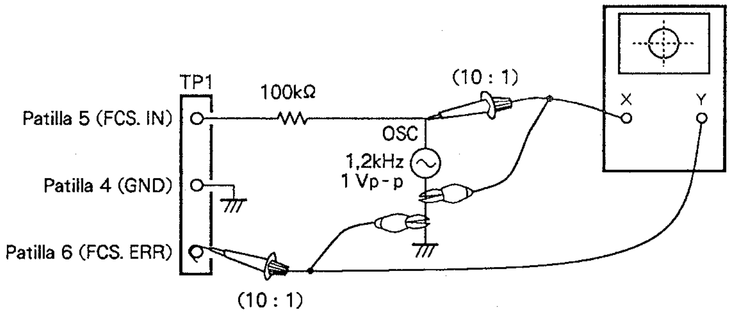


Foto. 7-8

Parte que debe observar



Insatisfactorio Ajuste óptimo Insatisfactorio

No. de paso	Ajuste del osciloscopio V	Ajuste del osciloscopio H	Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
8	**AJUSTE DE LA GANANCIA DE ENFOQUE**					
	20mV/div, 5mV/div. CH1 (X), CH2 (Y) (SONDA 10 : 1)		Eje X : Patilla 5 de TP1 (FCS. IN) Eje Y : Patilla 6 de TP1 (FCS. ERR)	VR3 (FCS. GAN)	Diferencia de fase 90°	● En el estado de POWER OFF (apagado), conecte el osciloscopio y el oscilador como se muestra en la Fig. 7-11. ● Ponga la unidad en el modo de reproducción (PLAY) normal. ● Encienda el oscilador y extraiga 1,2kHz 1 Vp-p. Nota : Dependiendo en los osciladores, algunos de ellos producen CC cuando son encendidos. Por lo tanto, es conveniente conectar el oscilador después del encendido. ● Ajuste con el volumen de FCS. GAN (Ganancia de enfoque) de VR3 de modo que la figura de Lissajous del osciloscopio a ser un círculo horizontal (90° de diferencia de fase).  TP1 100kΩ (10 : 1) X Y Patilla 5 (FCS. IN) OSC 1,2kHz 1 Vp-p Patilla 4 (GND) Patilla 6 (FCS. ERR) (10 : 1) Fig. 7-11

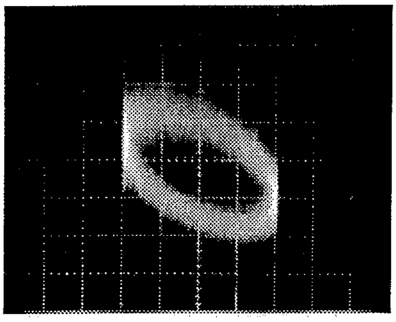


Foto. 7-9
Ganancia sobrecompensada

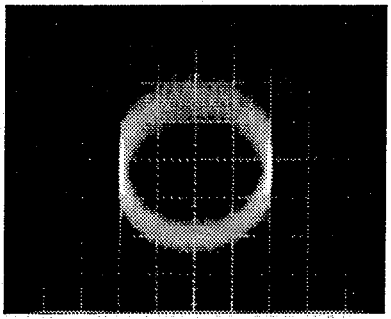


Foto. 7-10
Ganancia óptima

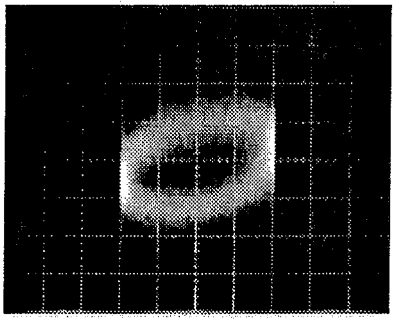
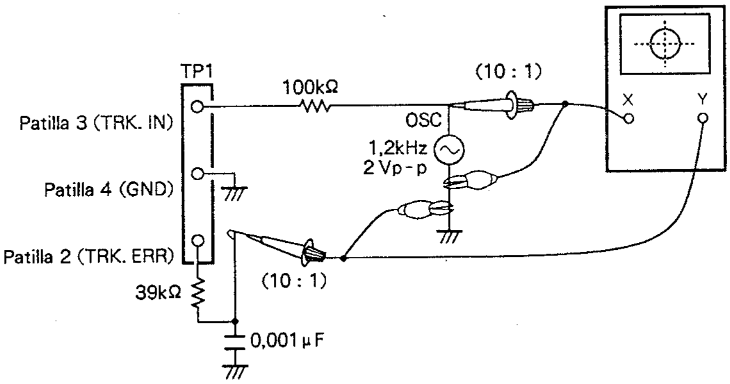


Foto. 7-11
Ganancia subcompensada

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
9	**AJUSTE DE LA GANANCIA DE SEGUIMIENTO**					
	50mV/div, 5mV/div CH1 (X), CH2 (Y) (SONDA 10 : 1)		Eje X : Patilla 3 de TP1 (TRK. IN) Eje Y : Patilla 2 de TP1 (TRK. ERR)	VR4 (TRK. GAN)	90° de diferencia	● En el estado de POWER OFF (apagado), conecte un osciloscopio y un oscilador como se muestra en la Fig. 7-12. ● Ponga la unidad en el modo de reproducción (PLAY) normal. ● Encienda el oscilador y extraiga 1,2 kHz 2 Vp-p. Nota : Dependiendo en los osciladores, algunos de ellos producen CC cuando son encendidos. Por la tanto, es conveniente conectar el oscilador después del encendido. ● Ajuste con el volumen de TRK. GAN de VR4 (Ganacia de seguimiento) de modo que la figura de Lissajous del osciloscopio llege a ser un círculo horizontal (90° de diferencia de fase).  TP1 100kΩ (10 : 1) X Y Patilla 3 (TRK. IN) OSC 1,2kHz 2 Vp-p Patilla 4 (GND) Patilla 2 (TRK. ERR) 39kΩ (10 : 1) 0,001 μF Fig. 7-12

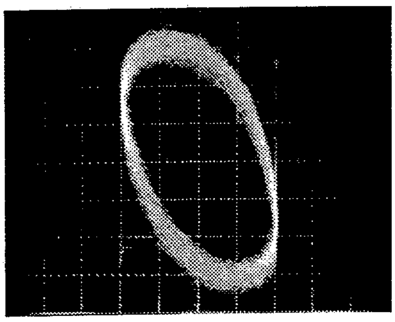


Foto. 7-12
Ganancia sobrecompensada

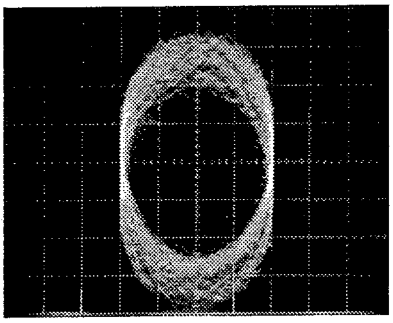


Foto. 7-13
Ganancia óptima

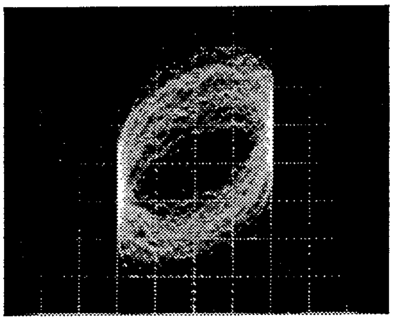


Foto. 7-14
Ganancia subcompensada

No. de paso	Ajuste del osciloscopio		Puntos de prueba	Puntos de ajuste	Items de verificación/ Especificaciones de ajuste	Procedimiento de ajuste
	V	H				
10	**AJUSTE DE LA FRECUENCIA PROPIA DE VCO**					
			Patilla 8 de TP2 (PLCK)	VR8 (VCO. ADJ)	4,275 ± 0,01MHz	● Ajuste el modo de TEST. ● Cortocircuite entre las patillas 25 y 26 de IC1 en el ensamblaje DEGT con un destornillador ⊖, etc. ● Conecte el frecuencímentro, que pueda medir arriba de 10 MHz, a la patilla 8 de TP2 (PLCK). ● Ajuste con el volumen VCO ADJ (ajuste de VCO) de VR8 de modo que el valor del frecuencímetro se ponga en 4,275 ± 0,01 MHz.
11	**MÉTODO PARA CONFIRMAR EL CARÁCTER S (ERROR DE ENFOQUE)**					
			Patilla 6 de TP1 (FCS. ERR)			● Ajuste el modo de TEST. ● Haga un cortocircuito entre FCS. IN (Entrada de enfoque) de la patilla 5 de TP1 y GND. ● Presione la tecla de $\boxed{-\text{MULTI-SPEED}+}$+$\boxed{1}$ y observe la forma de onda de FCS. ERR (Error de enfoque) de la patilla 6 de TP1 con un osciloscopio.

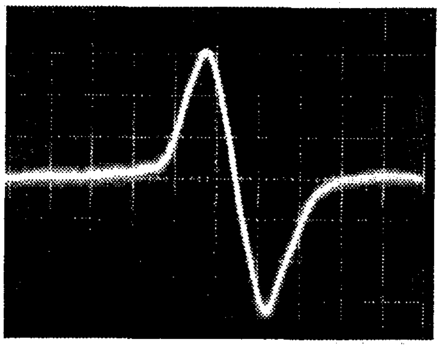


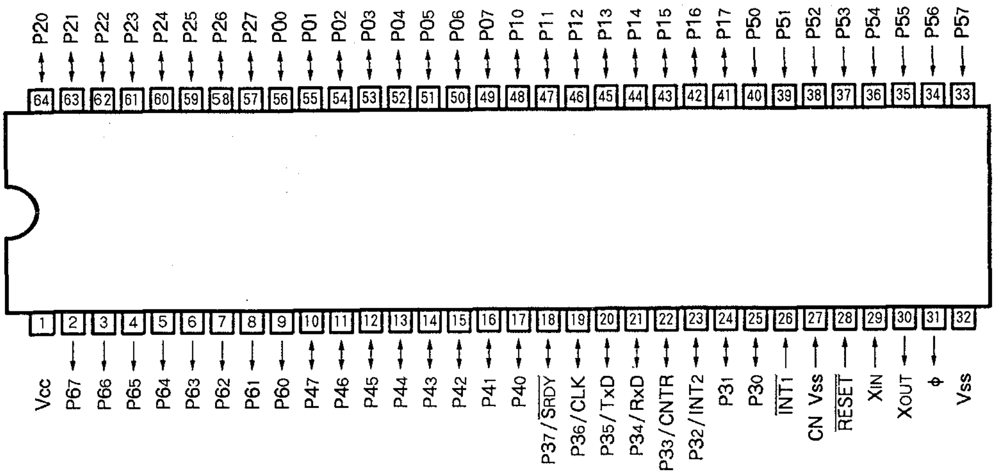
Foto. 7-15 Error de enfoque

8. IC DESCRIPTION

M50747SP

SYSTEM CONTROL (ROM LESS TYPE)

●Pin connections (Top view)


P20
P21
P22
P23
P24
P25
P26
P27
P00
P01
P02
P03
P04
P05
P06
P07
P10
P11
P12
P13
P14
P15
P16
P17
P50
P51
P52
P53
P54
P55
P56
P57
64
63
62
61
60
59
58
57
56
55
54
53
52
51
50
49
48
47
46
45
44
43
42
41
40
39
38
37
36
35
34
33
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
Vcc
P67
P66
P65
P64
P63
P62
P61
P60
P47
P46
P45
P44
P43
P42
P41
P40
P37/SRDY
P36/CLK
P35/TxD
P34/RxD
P33/CNTR
P32/INT2
P31
P30
INT1
CN Vss
RESET
XIN
XOUT
φ
Vss

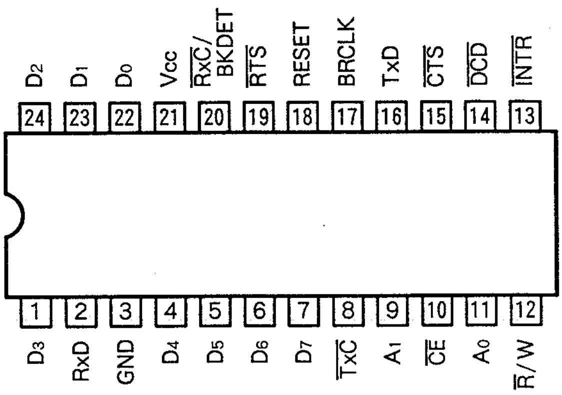
●Pin functions

Pin	Mark	Pin name	I/O	Function
1	Vcc	Power supply input	I	Apply +5V to Vcc.
2 – 9	P6$_7$ – P6$_0$	Output port P6	O	8 bits output port.
10 – 17	P4$_7$ – P4$_0$	Input/output port P4	I/O	8 bits input/output port.
18	P3$_7$/$\overline{S_{RDY}}$	Input/output port P3		8 bits input/output port. When P3$_6$, P3$_5$ and P3$_4$ is used for serial I/O, it respectively become CLK, TxD and RxD. When P3$_7$ is used for serial I/O of the clock synchronized type, it becomes $\overline{S_{RDY}}$. P3$_3$ is combined with I/O terminal of timer X (CNTR). P3$_2$ is combined with lowermost interrupt.
19	P3$_6$/CLK			
20	P3$_5$/TxD			
21	P3$_4$/RxD			
22	P3$_3$/CNTR			
23	P3$_2$/INT$_2$			
24	P3$_1$			
25	P3$_0$			
26	$\overline{INT_1}$	Interrupt input	I	Upper most interrupt input terminal.
27	CN Vss	CN Vss input		Connect to Vss.
28	$\overline{RESET}$	Reset input		Set the "L" more than 2μs, it becomes reset state.
29	X$_{IN}$	Clock input		Connect the crystal resonator.
30	X$_{OUT}$	Clock output	O	
31	φ	Timing output		Timing output.
32	Vss	Power supply input	I	Apply 0V to Vss.
33 – 40	P5$_7$ – P5$_0$	Input port P5		8 bits input port.
41 – 48	P1$_7$ – P1$_0$	Input/output port P1	I/O	8 bits input/output port.
49 – 56	P0$_7$ – P0$_0$	Input/output port P0		8 bits input/output port.
57 – 64	P2$_7$ – P2$_0$	Input/output port P2		8 bits input/output port.

■ HD64941

WALL BOX COMMUNICATION

● Pin connections (Top view)



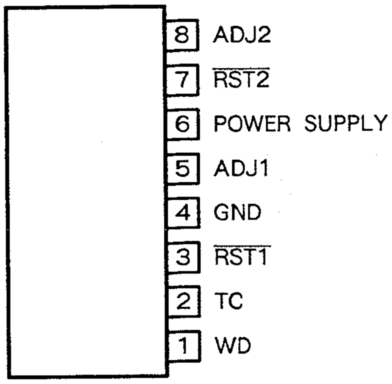
● Pin functions

Pin	Mark	Pin name	I/O	Function
1	D_3	DATA BUS$_0$ I DATA BUS$_7$	I/O	Bilateral data bus which using for data transfer with the CPU. High impedance at the reset.
4 – 7	D_4 – D_7			
22 – 24	D_0 – D_2			
2	RxD	RECEIVER DATA	I	Serial data input terminal to the reception section. "Mark" : "H", "Space" : "L"
16	TxD	TRANSMITTER DATA	O	Serial data output terminal from the transmission section. "Mark" = "H", "Space" : "L" "H" at the transmission section is not operated, and "H" at the reset.
3	GND	GROUND	—	Ground
21	Vcc	POWER SUPPLY		+5V power supply.
8	$\overline{TxC}$	TRANSMITTER CLOCK		Clock input terminal of the transmission section. $\overline{TxD}$ is used to synchronize with the transmission data when using the external transmission clock. $\overline{TxC}$ is used for the 1X/16X clock output terminal when using the internal transmission clock. Input state at the reset.
9	A_1	ADDRESS LINE $_{0,1}$		Signal for select the internal register.
11	A_0			
10	$\overline{CE}$	CHIP ENABLE		Addressing terminal of the CPU and internal HD64941. • When $\overline{CE}$ = L, perform the reading and writing operation to the internal register which is regulated with $\overline{R}$/W, A_0 and A_1 • When $\overline{CE}$ = H, set the D_0 through D_7 to high impedance state.
12	$\overline{R}$/W	READ/WRITE		Terminal for control the direction of the data transfer.
13	$\overline{INTR}$	INTERRUPT		Output terminal of the interrupt reguired signal "H" at the reset.
14	$\overline{DCD}$	DATA CARRIER DETECT		Detection input terminal of the data carrier. When $\overline{DCD}$ is "L", reception section is able to operate.
15	$\overline{CTS}$	CLEAR TO SEND		Clear to send (transmission) input terminal. $\overline{CTS}$ have to "L" for operating the transmission section. When becomes "H" during transmit, the end of transmission after complete the character transmission in the shift register for the transmission.
17	BRCLK	BAUD RATE CLOCK		Clock input terminal for generating the internal baud rate, It's useless to use the external transmission and reception clocks ($\overline{TxC}$ and $\overline{RxC}$.)
18	RESET	RESET		"0"clear terminal of the mode register 1 and 2, command register and status register.
19	$\overline{RTS}$	REQUEST TO SEND		General-purpose output terminal. $\overline{RTS}$ outputs which inverting the bit 5 of the command register (CR). Usually, it is used for reguire the transmission.
20	$\overline{RxC}$ /BKDET	RECEIVER CLOCK/ BREAK DETECTION		Clock input terminal of reception section. $\overline{RxC}$ is used to synchronize with the reception data when using the external reception clock. $\overline{RxC}$ is used for the output signal of brake detection (BK-DET) and the 1X/16X clock output terminal when using the internal reception clock. Input state at the reset.

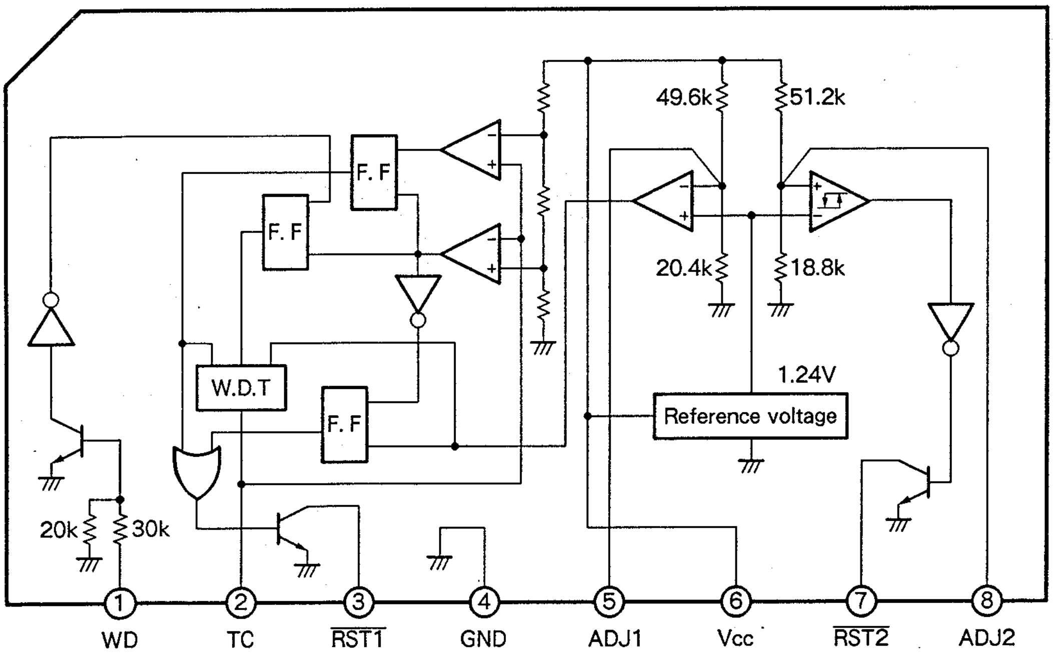
■ M5295L

WATCH-DOG TIMER

● Pin connections (Top view)


8 ADJ2
7 $\overline{\text{RST2}}$
6 POWER SUPPLY
5 ADJ1
4 GND
3 $\overline{\text{RST1}}$
2 TC
1 WD

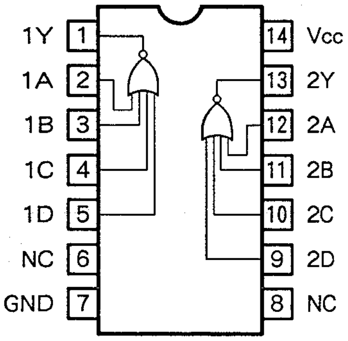
● Block diagram


F. F
F. F
F. F
W.D.T
49.6k
51.2k
20.4k
18.8k
1.24V
Reference voltage
20k
30k
1 WD
2 TC
3 $\overline{\text{RST1}}$
4 GND
5 ADJ1
6 Vcc
7 $\overline{\text{RST2}}$
8 ADJ2

TC74HC4002AP

DUAL 4-INPUT NOR GATE

● **Pin connections (Top view)**


1Y 1
1A 2
1B 3
1C 4
1D 5
NC 6
GND 7
14 Vcc
13 2Y
12 2A
11 2B
10 2C
9 2D
8 NC

Truth table

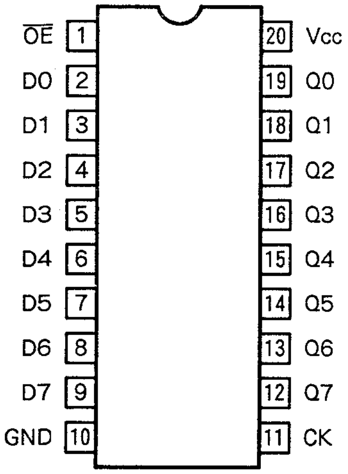
A	B	C	D	Y
H	X	X	X	L
X	H	X	X	L
X	X	H	X	L
X	X	X	H	L
L	L	L	L	H

X : Don't care

TC74HC574AP

OCTAL D-TYPE FLIP-FLOP WITH 3-STATE OUTPUT

● **Pin connections (Top view)**


OE 1
D0 2
D1 3
D2 4
D3 5
D4 6
D5 7
D6 8
D7 9
GND 10
20 Vcc
19 Q0
18 Q1
17 Q2
16 Q3
15 Q4
14 Q5
13 Q6
12 Q7
11 CK

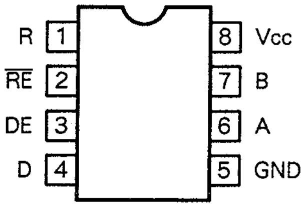
Truth table

INPUT			OUTPUTS
$\overline{CE}$	CK	D	Q (574A)
H	X	X	Z
L	↓	X	Qn
L	↑	L	L
L	↑	H	H

X : Don't Care
Z : High impedance
Qn ($\overline{Qn}$) : No change

SN75176BP

● **Pin connections (Top view)**


R 1
RE 2
DE 3
D 4
8 Vcc
7 B
6 A
5 GND

Truth table

INPUT	ENABLE	OUTPUTS	
D	DE	A	B
H	H	H	L
L	H	L	H
X	L	Z	Z

H = high level, L = low level,
X = irrelevant, Z = high impedance (off)